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Title: Release A Toolkit 5.1.1 Version Description Document (VDD) for the ECS Project

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EOSDIS Core System Project

Release A Toolkit 5.1.1 Version Description Document (VDD) for the ECS Project

**Subject to government approval and not intended for
general distribution.**

Version 1.00

November 1996

Hughes Information Technology Systems
Upper Marlboro, Maryland

Release A Toolkit 5.1.1 Version Description Document (VDD) for the ECS Project

Version 1.00

November 1996

Prepared Under Contract NAS5-60000

SUBMITTED BY

<u>Robert E. Clinard /s/</u>	<u>11/22/96</u>
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Upper Marlboro, Maryland

814-RD-005-003

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Preface

This document accompanies the delivery of Release A Toolkit 5.1.1 Version 1.00. It is not a formal deliverable and does not require Government approval; however, it has been placed under configuration control by the EOSDIS Core System (ECS) Science Data Processing Segment. Changes to this document shall be made by document change notice (DCN) or by complete revision.

This Toolkit version is directed at Earth Observing System (EOS) instrument data providers who will deliver code to the ECS Release A Distributed Active Archive Centers (DAACs). It is an engineering upgrade to Toolkit 5.1, delivered in May 1996. The user calling interface of the current version is the same as that of Toolkit 5.1, except that several new functions have been added.

Users who implement the current Toolkit version, will be able to test their (Product Generation Executives) PGEs at the Interim Release 1 (Ir1) DAACs. These are at EROS Data Center (EDC), Goddard Space Flight Center (GSFC), and Langley Research Center (LaRC). Release A Toolkit 5.1.1 Version 1.00 production system capability, however, will not be available until Release A Science Software Integration and Test activities begin, in the first quarter of 1997.

Any questions regarding distribution should be addressed to:

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Change Information Page

List of Effective Pages			
Page Number	Issue		
Title	Original		
iii through viii	Original		
1-1 and 1-2	Original		
2-1 and 2-2	Original		
3-1 through 3-8	Original		
4-1 through 4-114	Original		
5-1 through 5-38	Original		
A-1 and A-2	Original		
B-1 and B-2	Original		
C-1 and C-2	Original		
D-1 and D-2	Original		
E-1 and E-2	Original		
F-1 and F-2	Original		
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814-RD-005-003	Original	November 1996	96-1313

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Contents

Preface

1. Introduction

1.1 Identification of Document.....	1-1
1.2 Scope of Document.....	1-1
1.3 Purpose and Objectives of Document.....	1-1
1.4 Document Status and Schedule.....	1-1
1.5 Document Organization.....	1-1

2. Related Documentation

2.1 Parent Documents.....	2-1
2.2 Applicable Documents.....	2-1

3. Product Description

3.1 Product Description and General Capabilities.....	3-1
3.2 Release A Toolkit 5.1.1 Routine Listing.....	3-2
3.3 Release A Toolkit 5.1.1 Test Tools and Drivers.....	3-7
3.4 Release A Toolkit 5.1.1 Hierarchical Data Format.....	3-8
3.5 Release A SCF Toolkit User's Guide.....	3-8

4. Product Inventory

4.1 Release A Toolkit 5.1.1 Tar File Listing.....	4-1
4.2 Test Tools Tar File Listing.....	4-34
4.3 Hierarchical Data Files Listing.....	4-60
4.4 Release A SCF Toolkit User's Guide Table of Contents.....	4-98

5. Non-Conformance Status

5.1 Known Problems with Release A Toolkit 5.1.1.....	5-1
5.2 Release A Toolkit 5.1.1 Non-Conformance Reports (Closed Status).....	5-1
5.3 Release A Toolkit Version 5.1.1 Non-Conformance Reports (Open Status)	5-20

Appendix A. Build/Installation Instructions

Appendix B. Special Operating Instructions

Appendix C. System Limitations

Appendix D. User Feedback Procedures

Appendix E. Public Software Disclaimer Notice

Appendix F. Test Baseline Configuration

Abbreviations and Acronyms

1. Introduction

1.1 Identification of Document

This document is a Version Description Document (VDD) prepared using NASA-STD-2100-91 as a guide. It is submitted as required for the Earth Observing System Data and Information System (EOSDIS) Core System (ECS), contract number NAS5-60000.

1.2 Scope of Document

This VDD specifies the delivery contents of the ECS Release A Toolkit 5.1.1 Version 1.00 software and accompanying documentation.

1.3 Purpose and Objectives of Document

The purpose of this VDD is to describe the contents of the delivery of Release A Toolkit 5.1.1 Version 1.00. The document briefly describes all tools that incorporate the delivery, provides an inventory of the delivery, lists unresolved problems, and addresses special issues such as special operating instructions, system limitations, and disclaimer notices for public domain software used in the library.

1.4 Document Status and Schedule

This Version Description Document for Release A Toolkit 5.1.1 Version 1.00 is submitted as a final document. Any changes to Release A Toolkit 5.1.1 Version 1.00 that require a subsequent version to be released will be described in a new Version Description Document.

1.5 Document Organization

The format and contents of this document comply with NASA-DID-P500 and NASA-DID-999 as defined in NASA-STD-2100-91.

- Introduction — Introduces the VDD scope, purpose, objectives, status, schedule and document organization.
- Related Documentation — Provides a bibliography of reference documents for the VDD organized by parent and binding subsections.
- Product Description — Describes the general capabilities and product contents.

- Inventory — Tar file listings for Release A SCF Toolkit source and test drivers, and table of contents list of User's Guide.
- Non-conformance Status — Discusses known problems with Release A SCF Toolkit 5.1.1 Version 1.00 and lists Non-conformance Reports with open status.
- Appendices — Contain supplemental information such as: Build/installation instructions, special operating instructions, system limitations, user feedback procedures, public software disclaimer notices, and the test baseline configuration.

2. Related Documentation

2.1 Parent Documents

The following documents are the parent from which this document's scope and content derive:

423-41-01	EOSDIS Core System Statement of Work
423-16-02	Science Data Processing (SDP) Toolkit Requirements Specification for the ECS Project
193-801-SD4-001	The SDP Toolkit Requirements Specification for the Earth Observing System Data and Information System (EOSDIS) Core System

2.2 Applicable Documents

The following documents are directly applicable to this plan to the extent referenced herein. In the event of conflict between any of these documents and this plan, the plan shall take precedence.

333-CD-003-005	Release A SCF Toolkit User's Guide for the ECS Project
NASA-STD-2100-91	NASA Software Documentation Standard, Software Engineering Program

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3. Product Description

This section describes the general capabilities of Release A Toolkit, version 5.1.1, and the tools and test drivers provided.

3.1 Product Description and General Capabilities

The Release A Toolkit will be used by data production software developers and scientists to develop code at their Science Computing Facilities and later encapsulate that code in Distributed Active Archive Center computing facilities. The purpose of the Toolkit is to provide an interface between instrument processing software and the production system environment. It sets up the context and environment for the execution of production processes and the transfer of data sets and information to those processes. This interface will be implemented in the SCF development environment along with additional utilities that will be used to emulate production environment services.

An important goal of the Toolkit is to facilitate the smooth transition and integration of code into the DAAC by abstracting out science process dependencies on external system architecture. Another goal is the provision of an interface into which application modules can be incorporated. This may include, for example, geo-location packages, other specialized routines that can be Commercial-Off-The-Shelf, freeware or user supplied modules.

Please note:

Release A Toolkit 5.1.1 Version 1.00 was certified on the Numerical Algorithms Group (NAG) FORTRAN 90 compiler on the Sun OS 4 and SGI Irix 5 platforms only.

Release A Toolkit 5.1.1 Version 1.00 is now tested on the Cray C90.

See also Appendices A and F for further description of the installation scripts and the test baseline configuration.

The Toolkit Utilities and Ancillary data files are not part of the tool set but are part of this delivery. The Toolkit Utilities are ancillary data creation and file management utilities. They are provided to enhance the SCF development environment in lieu of an operational production environment. Additionally, the Ancillary/Auxiliary (AA) data access tools are provided. It is not necessary to install these files if users do not plan to use these tools.

3.2 Release A Toolkit 5.1.1 Routine Listing

The following Release A Toolkit 5.1.1 Routine listing provides a description of the tools.

Tool Name	Description
pccheck	Use to verify that a process control file (PCF) is syntactically correct
PGS_AA_2Dgeo	Allows access to 2 dimensional data sets e.g., sea-ice
PGS_AA_2DRead	Allows access to 2 dimensional data sets e.g., sea-ice
PGS_AA_3Dgeo	Allows access to 3 dimensional data sets, e.g., atmospheric humidity
PGS_AA_3DRead	Allows access to 3 dimensional data sets, e.g., atmospheric model
PGS_AA_dcw	Returns the surface types (land, sea, coast), and nation-state to be determined (TBD) for a user defined set of locations
PGS_AA_dem	Locates heights from specified digital elevation model (DEM) corresponding to each of the locations specified
PGS_AA_PeVA_integer	Searches in a specified file for the parameter and returns the value of that parameter which is an integer
PGS_AA_PeVA_real	Searches in a specified file for the parameter and returns the value of that parameter which is a real(float)
PGS_AA_PeVA_string	Searches in a specified file for the parameter and returns the value of that parameter which is a text string
PGS_CBP_body_inFOV	Given instrument parameters, returns a flag to indicate whether any of the user-selected major celestial bodies (sun, moon, etc.) are in the instrument field-of-view.
PGS_CBP_BrightStar_positions*	Returns the position of all stars of magnitude > input magnitude, or the position of the stars designated by inputting star id's and setting the flag 'input_flag'.
PGS_CBP_Earth_CB_Vector	Computes the Earth centered inertial (ECI) frame vector from the Earth to the sun, moon, or planets at a given time, or range of time(s)
PGS_CBP_Sat_CB_Vector	Computes the ECI vector from the spacecraft to the sun, moon, or planets at a given time or range of time(s)
PGS_CBP_SolarTimeCoords	Computes local solar time, and right ascension and declination of the sun, for a given standard time and position on the surface of the Earth
PGS_CSC_DayNight	Determines whether a given point on the Earth is in day, night or twilight, at a given time
PGS_CSC_Earthpt_FixedFOV	For a fixed field of view obtains the Coordinated Universal Time (UTC) time interval and the starting time that an Earth point is within the field-of-view, within a specified time window
PGS_CSC_Earthpt_FOV	For a field of view defined by a table of coordinates (accessed externally), and a known motion of the boresight vector as a function of time, obtains the Coordinated Universal Time (UTC) time interval and the starting time that an Earth point is within the field-of-view, within a specified time window
PGS_CSC_ECItoECR	Frame change tool
PGS_CSC_ECItoORB	Transforms a vector in the ECI Coordinate system to a vector in the Orbital Coordinate System
PGS_CSC_ECItoSC	Frame change tool
PGS_CSC_ECRtoECI	Frame change tool

Tool Name	Description
PGS_CSC_ECRtoGEO	Frame change tool
PGS_CSC_GEOtoECR	Frame change tool
PGS_CSC_GetFOV_Pixel	Computes the projection of (geolocates) the instrument field-of-view on the Earth, optionally, geolocates the center of each pixel in the footprint
PGS_CSC_GreenwichHour	Returns the Greenwich Hour Angle of the vernal equinox, which is equal to Greenwich sidereal time, in the ECI frame, at a given time.
PGS_CSC_J2000toTOD	Transform from ECI J2000 to ECI True Date
PGS_CSC_nutate2000	Transforms a vector under nutation from Celestial Coordinates of date in Barycentric Dynamical Time (TDB) to J2000 coordinates or from J2000 coordinates to Celestial Coordinates of date
PGS_CSC_ORBtoECI	Transforms vector in orbital coordinate system to vector in ECI coordinate system
PGS_CSC_ORBtoSC	Frame change tool
PGS_CSC_precs2000	Precesses a vector from Celestial Coordinates of date in Barycentric Dynamical Time (TDB) to J2000 coordinates or from J2000 coordinates to Celestial Coordinates of date in Barycentric Dynamical Time (TDB)
PGS_CSC_SCtoECI	Frame change tool
PGS_CSC_SCtoORB	Frame change tool
PGS_CSC_SpaceRefract	Estimate the refraction for a ray incident from space or a line of sight from space to the Earth's surface, based on the unrefracted zenith angle
PGS_CSC_SubSatPoint	Returns the position and velocity vector of the sub-satellite point ("pierce point"), or nadir of the satellite on the Earth's surface. Optionally returns the nadir vector also.
PGS_CSC_TODtoJ2000	Transform from ECI True of Date to ECI J2000 Coordinates
PGS_CSC_wahr2	Calculates nutation angles
PGS_CSC_ZenithAzimuth	Returns zenith and azimuth angles of spacecraft
PGS_CUC_Cons	Accesses constant values from a predetermined input file
PGS_CUC_Conv	Accesses conversion slope and intercept values, needed to convert between units
PGS_EPH_EphemAttit	Provides access to spacecraft ephemeris and attitude data for a given time range, interpolates the state vectors and spacecraft attitude to a specified time
PGS_EPH_GetEphMet	Returns the metadata associated with spacecraft ephemeris files
PGS_GCT_Init	Performs Geo-coordinate transformation initialization for the given projection with the given parameters
PGS_GCT_Proj	Performs Geo-coordinate transformations for the given projection in the forward and inverse directions
PGS_IO_Gen_Close	Close non-HDF file
PGS_IO_Gen_CloseF	Close non-HDF file FORTRAN
PGS_IO_Gen_Open	Open non-HDF file
PGS_IO_Gen_OpenF	Open non-HDF file FORTRAN 77 & 90
PGS_IO_Gen_Temp_Delete	Permanently delete a temporary file
PGS_IO_Gen_Temp_Open	Open temporary file
PGS_IO_Gen_Temp_OpenF	Open temporary file FORTRAN 77 & 90
PGS_IO_L0_Close	Closes a virtual data set that was opened with a call to PGS_IO_L0_Open.
PGS_IO_L0_File_Sim	Creates a file of simulated Level 0 data

Tool Name	Description
PGS_IO_L0_GetHeader	Gets the header and footer data for the currently open physical file
PGS_IO_L0_GetPacket	Gets a single packet from the specified Level 0 Virtual Data Set
PGS_IO_L0_Open	Open a Virtual Level 0 Data Set
PGS_IO_L0_SetStart	Sets the specified open virtual data set so that the next call to PGS_IO_L0_GetPacket will read the first packet at or after the specified time
PGS_MEM_Calloc	Allocates an array of arbitrarily sized elements, initializing them to zero, in memory
PGS_MEM_Free	Deallocates memory that was previously allocated
PGS_MEM_FreeAll	Deallocates all memory that was previously allocated within a process
PGS_MEM_Malloc	Allocates an arbitrary number of bytes in memory
PGS_MEM_Realloc	Reallocates the number of bytes requested
PGS_MEM_ShmAttach	Used by an executable to attach to an existing shared memory segment
PGS_MEM_ShmCreate	Used to create a shared memory segment
PGS_MEM_ShmDetach	Used to detach a shared memory segment from a process that attached it
PGS_MEM_ShmReadF	FORTRAN Read from Shared Memory
PGS_MEM_ShmWriteF	FORTRAN Write to Shared Memory
PGS_MEM_Zero	Initializes a memory block or structure to zero
PGS_MET_GetConfigData	Enables the user to get the values of Config data parameters held in the PC table
PGS_MET_GetPCAttr	Retrieves parameter values from the PC table which are either located as HDF attributes on product files or in separate ASCII files
PGS_MET_GetSetAttr	Enables the user to get the values of metadata parameters which are already set by the initialization procedure
PGS_MET_Init	Initializes a metadata configuration file (MCF)
PGS_MET_Remove	Contains PGS_MET_Remove() which frees the memory held by the metadata configuration file (MCF) and data dictionary object description language (ODL) representations
PGS_MET_SetAttr	Enables the user to set the value of metadata parameters
PGS_MET_Write	Enables the user to write different groups of metadata to separate HDF attributes
PGS_PC_GenUniqueID	Used to generate a unique product identifier. May be attached to file metadata to facilitate tracking of production output
PGS_PC_GetConfigData	May be used to access run-time parameters in-the PGE
PGS_PC_GetConfigDataCom	May be used to access run-time parameters at the shell level
PGS_PC_GetFileAttr	Used to retrieve the attribute string that contains the metadata for a Product file
PGS_PC_GetFileAttrCom	Used at the shell level to retrieve an attribute "stream" that contains the metadata for a Product file
PGS_PC_GetFileByAttr	Used to retrieve the specific instance of a product file that satisfies the search criteria, defined by a user-supplied method, applied to the metadata of each product file instance
PGS_PC_GetNumberOfFiles	May be used to query the number of file instances that are associated with a particular product file
PGS_PC_GetNumberOfFilesCom	May be used, at the shell level, to query the number of file instances that are associated with a particular product file
PGS_PC_GetReference	Used to obtain a physical file pathname from a logical identifier for a particular Product file

Tool Name	Description
PGS_PC_GetReferenceCom	Used at the shell level to obtain a physical file pathname from a logical identifier for a particular Product file
PGS_PC_GetReferenceType	Tool may be used to ascertain the type of file reference which is associated with a logical identifier within the science software
PGS_PC_GetTempReferenceCom	Used at the shell level to obtain a physical file pathname from a logical identifier for a particular Temporary, or Intermediate file
PGS_PC_InitCom	Used, prior to PGE execution, to establish a working environment for the SDP Toolkit
PGS_PC_Shell.sh	Provides an integrated environment for the SDP Toolkit and a PGE
PGS_PC_TempDeleteCom	Used at the shell level to delete the Temporary file currently associated with a particular logical identifier
PGS_PC_TermCom	Used, following PGE termination, to cleanup the resources used by the SDP Toolkit
PGS_SMF_Begin	Signal SMF that function has started
PGS_SMF_CreateMsgTag	May be used to generate a unique message identifier
PGS_SMF_End	Signal SMF that function has ended
PGS_SMF_GenerateStatusReport	Used to add user-defined status reports to the Status Report Log file
PGS_SMF_GetActionByCode	Provide the means to retrieve an action string associated with a specific mnemonic code
PGS_SMF_GetInstrName	Used to retrieve the instrument name from a given error/status code
PGS_SMF_GetMsg	Provide the means to retrieve a previously set message from the static buffer PGS_SMF_Set....
PGS_SMF_GetMsgByCode	Provide the means to retrieve the message string corresponding to a specific mnemonic code
PGS_SMF_SendRuntimeData	Provide a means for the user to transmit a package of runtime data to the SCF in the event of an unhandled system exception
PGS_SMF_SetArithmeticTrap*	Used to specify a signal handling function to perform in the event that an error arithmetic operation has occurred.
PGS_SMF_SetDynamicMsg	Provide the means to set a user-defined error/status message in response to the outcome of some segment of processing.
PGS_SMF_SetHDFMsg*	Provide the means to retain the HDF-EOS error message as a result of an HDF-EOS error.
PGS_SMF_SetStaticMsg	Provide the means to set a predefined error/status message in response to the outcome of some segment of processing.
PGS_SMF_SetUNIXMsg	Provides the means to retain UNIX error messages for later retrieval
PGS_SMF_TestErrorLevel	Will return a Boolean value indicating whether or not the returned code has status level 'E'
PGS_SMF_TestFatalLevel	Will return a Boolean value indicating whether or not the returned code has status level 'F'
PGS_SMF_TestMessageLevel	Will return a Boolean value indicating whether or not the returned code has status level 'M'
PGS_SMF_TestNoticeLevel	Will return a Boolean value indicating whether or not the returned code has status level 'N'
PGS_SMF_TestStatusLevel	Will return a defined status level constant
PGS_SMF_TestSuccessLevel	Will return a Boolean value indicating whether or not the returned code has status level 'S'
PGS_SMF_TestUserInfoLevel	Will return a Boolean value indicating whether or not the returned code has status level 'U'
PGS_SMF_TestWarningLevel	Will return a Boolean value indicating whether or not the returned code has status level 'W'

Tool Name	Description
PGS_TD_ASCIItime_AtoB	Converts binary time values to ASCII Code B time values of the form year_month_day_time_of_day in the Consultative Committee on space Data Systems (CCSDS) format
PGS_TD_ASCIItime_BtoA	Converts binary time values to ASCII Code A time values of the form year_month_day_time_of_day in the CCSDS format
PGS_TD_GPStoUTC	Converts to Coordinated Universal Time (UTC) time value from Global Positioning System (GPS) time by converting to internal time, adding the GPS_minus_UTC_leapseconds from the leapseconds file, and converting to GPS format following CCSDS ASCII standard A
PGS_TD_LeapSec	Find Leap second value
PGS_TD_Sctime_to_UTC	Converts spacecraft clock time to UTC for EOS platforms or for foreign spacecraft
PGS_TD_TAItoGAST	Converts International Atomic Time (TAI) (toolkit internal time) to Greenwich apparent sidereal time (GAST) expressed as the hour angle of the true vernal equinox of date at the Greenwich meridian (in radians)
PGS_TD_TAIjdtoTAI	Converts TAI Julian date to time in TAI seconds since 12 AM UTC 1-1-1993
PGS_TD_TAItoTAIjd	Converts time in TAI seconds since 12 AM UTC 1-1-1993 to TAI Julian date
PGS_TD_TAItoUTC	Converts TAI time value to UTC time
PGS_TD_TimeInterval	Computes the elapsed TAI time in seconds between any two epochs after January 1, 1958
PGS_TD_UTCtoGPS	Converts UTC time value to GPS time by converting to internal time, adding the GPS_minus_UTC_leapseconds from the leapseconds file, and converting to GPS format following CCSDS ASCII standard A
PGS_TD_UTCtoTAI	Converts UTC time to TAI time by first converting UTC to internal time and then adding the TAI_minus_UTC_leapseconds from the leapseconds file
PGS_TD_UTCtoTDBjed	UTC to Barycentric Dynamical Time (TDB) time conversion
PGS_TD_UTCtoTDTjed	UTC to Terrestrial Dynamical Time (TDT) time conversion
PGS_TD_UTCtoUT1	Converts UTC to UT1 time
PGS_TD_UTCtoUT1jd	Converts UTC time in CCSDS ASCII Time Code to UT1 time as a Julian date
PGS_TD_UTCjdtoUTC	Converts UTC as a Julian date to UTC in CCSDS ASCII Time Code A format
PGS_TD_UTCtoUTCjd	Converts UTC in CCSDS ASCII Time Code A format to UTC as a Julian date
PGS_TD_UTC_to_Sctime	Converts UTC to Spacecraft clock time for EOS standard of Foreign Spacecraft
smfcompile	Provides means to store messages in files that are accessed at runtime to get the message text.

* Undelivered at this time; please see the Release A SCF Toolkit User's Guide.

3.3 Release A Toolkit 5.1.1 Test Tools and Drivers

Included in the delivery of Release A SCF Toolkit 5.1.1 Version 1.00 are sample drivers for each toolkit routine or set of routines. These drivers are provided “as is” as an aid to the Toolkit Users. These drivers have been used during the integration and test process and may be useful to verify installation, debug errors encountered while using the toolkit, or as sample routines for calling the toolkit functions. They are provided as a service to the toolkit users and will not be maintained or updated.

The drivers are contained in a separate tar file named SDPTK5.1.1v1.00_TestDrivers.tar.Z. The file contains a driver for each tool or set of related tools (such as Generic I/O), a “Readme file” describing how to compile and use the drivers for each tool group, a makefile for each tool group, sample output files and sample input files for the drivers. In addition to the “Readme file”, the drivers and sample files are well commented to aid the user in correct usage. This is the only documentation that will be delivered for the drivers. To access the sample drivers, untar the file, read the desired readme, set the environment, make the desired driver and run. The files in the sample driver directory (test_drivers) follow the following naming convention:

1) Driver Name:

C Driver: tool_name_Driver_c.c

Fortran Driver: tool_name_Driver_f.f

(Example: PGS_CBP_Earth_CB_Vector_Driver_c.c)

or for a tool group with one driver: tool_group_name_Driver_c.c and tool_group_name_Driver_f.f (ex: PGS_GCT_Driver_f.f)

The `_c` and `_f` in the name prevents name conflicts between the C and FORTRAN in the executables.

2) README file: README.<tool group name>.

The README file explains how to use drivers. The README file also contains all the environment variables needed to be set to run the driver, with some examples of values for those variables.

The make instruction assumes the Toolkit Libraries are available and the Toolkit environmental variable have been set, for example:

\$PGSLIB points to the toolkit library

\$PGSINC points to the include files

3) Sample output: <Driver_Name>.out_sample

4) Sample input file: Driver_Name.in

The drivers have been implemented to be used either interactively (requiring user inputs) or driven by an input file. All of the tools can operate in both modes. The sample output was obtained by running the tool from the provided input file. Repeating this process and comparing the output with the sample file may be useful in validating proper installation or porting of the toolkit. Using the interactive capabilities or modifying the input file to fit the values encountered during your integration may help to debug errors encountered while using the toolkit.

3.4 Release A Toolkit 5.1.1 Hierarchical Data Format

The Hierarchical Data Format (HDF) has been selected by the EOSDIS Project as the format of choice for standard product distribution. HDF is a *disk format* and *subroutine library* for storage of most kinds of scientific data. As a *disk format*, HDF files consist of a directory and an unordered set of binary data objects. Each directory entry describes the location, the type, and the size of these binary objects.

The *HDF subroutine library* is designed to be easy for C and Fortran programmers to use. The HDF library consists of callable routines, each of which belongs to a particular *interface*. Each interface within these layers address a particular HDF function or a particular HDF data structure, such as arrays, tables, and annotations.

3.5 Release A SCF Toolkit User's Guide

The purpose of the Release A SCF Toolkit User's Guide is to provide EOS instrument data processing software developers and scientists with knowledge of Release A Toolkit 5.1.1 functionality, and to provide a listing of routine calling sequences, detailed descriptions, and examples of usage. This document accompanies the software delivery described in Sections 3.2, 3.3, and 3.4 above.

4. Product Inventory

4.1 Release A Toolkit 5.1.1 Tar File Listing

A listing of the tar file “SDPTK5.1.1v1.00.tar.Z” follows:

```
TOOLKIT/  
TOOLKIT/bin/  
TOOLKIT/bin/INSTALL  
TOOLKIT/bin/common/  
TOOLKIT/bin/common/INSTALL  
TOOLKIT/bin/common/INSTALL-AAdata  
TOOLKIT/bin/common/INSTALL-HDF  
TOOLKIT/bin/common/INSTALL-Toolkit  
TOOLKIT/bin/common/ftp.csh  
TOOLKIT/bin/common/mkpgslib  
TOOLKIT/bin/common/pgs-flags  
TOOLKIT/bin/common/tmp/  
TOOLKIT/bin/common/tmp/jackets.c.unicos  
TOOLKIT/bin/common/tmp/pgs-dev-env.csh.tmp  
TOOLKIT/bin/common/tmp/pgs-dev-env.ksh.tmp  
TOOLKIT/bin/common/tmp/pgs-env.csh.tmp  
TOOLKIT/bin/common/tmp/pgs-env.ksh.tmp  
TOOLKIT/bin/common/INSTALL-HDF4.0r1p1  
TOOLKIT/bin/common/INSTALL-HDF4.0r2  
TOOLKIT/bin/common/INSTALL-HDFEOS-Wrap  
TOOLKIT/bin/INSTALL-AAdata  
TOOLKIT/bin/INSTALL-HDF  
TOOLKIT/bin/INSTALL-HDF4.0r1p1  
TOOLKIT/bin/INSTALL-HDF4.0r2
```

TOOLKIT/bin/INSTALL-HDFEOS-Wrap
TOOLKIT/bin/INSTALL-Toolkit
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TOOLKIT/src/TD/PGS_TD_UTCtoUTCjd.c
TOOLKIT/src/TD/PGS_TD_bindFORTRAN.c
TOOLKIT/src/TD/PGS_TD_calday.c
TOOLKIT/src/TD/PGS_TD_gast.c

TOOLKIT/src/TD/PGS_TD_gmst.c
TOOLKIT/src/TD/PGS_TD_julday.c
TOOLKIT/src/TD/PGS_TD_sortArrayIndices.c
TOOLKIT/src/TD/PGS_TD_timeCheck.c
TOOLKIT/src/TD/time_notes.txt
TOOLKIT/src/TD/update_leapsec.sh
TOOLKIT/src/TD/PGS_TD_TJDtoJD.c
TOOLKIT/src/TD/PGS_TD_JDtoTJD.c
TOOLKIT/src/TD/PGS_TD_FGDCtoUTC.c
TOOLKIT/src/TD/PGS_TD_UTCtoFGDC.c
TOOLKIT/src/TD/PGS_TD_ISOintoTAI.c
TOOLKIT/src/TD/PGS_TD_ISOintoUTCjd.c
TOOLKIT/src/TD/PGS_TD_TAItaISOint.c
TOOLKIT/src/TD/PGS_TD_UTCjdtISOint.c
TOOLKIT/src/TD/PGS_TD_UT1jdtUTCjd.c
TOOLKIT/src/TD/PGS_TD_PB5CtoUTCjd.c
TOOLKIT/src/TD/PGS_TD_TAItaUDTF.c
TOOLKIT/src/TD/PGS_TD_UDTFtoTAI.c
TOOLKIT/src/TD/PGS_TD_UDTFtoUTCjd.c
TOOLKIT/src/TD/PGS_TD_UTCjdtPB5C.c
TOOLKIT/src/TD/PGS_TD_UTCjdtUDTF.c
TOOLKIT/src/TD/PGS_TD_ADEOSIItoTAI.c
TOOLKIT/src/TD/PGS_TD_ADEOSIItoUTC.c
TOOLKIT/src/TD/PGS_TD_ManageTMDF.c
TOOLKIT/src/TD/PGS_TD_ManageUTCF.c
TOOLKIT/src/TD/PGS_TD_UTCtoADEOSII.c
TOOLKIT/test/

4.2 Test Tools Tar File Listing

The Release A Toolkit 5.1.1 test drivers tar file listing “SDPTK5.1.1v1.00_TestDrivers.tar.Z” follows:

```
test_drivers/  
test_drivers/AA/  
test_drivers/AA/PGS_AA_2DRead_Driver_f.f  
test_drivers/AA/PGS_AA_3DRead_Driver_f.f  
test_drivers/AA/PGS_AA_2DRead_Driver_c.c  
test_drivers/AA/PGS_AA_PeV_real_Driver_c.c  
test_drivers/AA/PGS_AA_PeV_integer_Driver_c.c  
test_drivers/AA/PGS_AA_PeV_string_Driver_c.c  
test_drivers/AA/PGS_AA_3DRead_Driver_c.c  
test_drivers/AA/makefile  
test_drivers/AA/makefile.f90  
test_drivers/AA/PGS_AA_PeV_integer_Driver.in  
test_drivers/AA/PGS_AA_PeV_integer_Driver_c.out_sample  
test_drivers/AA/PGS_AA_PeV_real_Driver.in  
test_drivers/AA/PGS_AA_PeV_real_Driver_c.out_sample  
test_drivers/AA/PGS_AA_PeV_string_Driver.in  
test_drivers/AA/PGS_AA_PeV_string_Driver_c.out_sample  
test_drivers/AA/PGS_AA_2DRead_Driver_c.out_sample  
test_drivers/AA/PGS_AA_2DRead_Driver_f.out_sample  
test_drivers/AA/PGS_AA_3DRead_Driver_c.out_sample  
test_drivers/AA/PGS_AA_3DRead_Driver_f.out_sample  
test_drivers/AA/README.AA  
test_drivers/AA/PGS_AA_3DRead_Driver.in  
test_drivers/AA/PGS_AA_2DRead_Driver.in  
test_drivers/AA/PGS_AA_PeV_integer_Driver_f.f  
test_drivers/AA/PGS_AA_PeV_real_Driver_f.f  
test_drivers/AA/PGS_AA_PeV_string_Driver_f.f
```

test_drivers/AA/PGS_AA_PeV_real_Driver_f.out_sample
test_drivers/AA/PGS_AA_PeV_integer_Driver_f.out_sample
test_drivers/AA/PGS_AA_PeV_string_Driver_f.out_sample
test_drivers/AA/PGS_AA_PeVA_integer_Driver_c.c
test_drivers/AA/PGS_AA_PeVA_real_Driver_c.c
test_drivers/AA/PGS_AA_PeVA_string_Driver_c.c
test_drivers/AA/PGS_AA_PeVA_integer_Driver_f.f
test_drivers/AA/PGS_AA_PeVA_real_Driver_f.f
test_drivers/AA/PGS_AA_PeVA_string_Driver_f.f
test_drivers/AA/AATestData/
test_drivers/AA/AATestData/testdata1
test_drivers/AA/AATestData/testdata1.bfm
test_drivers/AA/AATestData/testdata1Support
test_drivers/AA/AATestData/testdata2.bfm
test_drivers/AA/AATestData/testdata2Support
test_drivers/AA/AATestData/testdouble.bfm
test_drivers/AA/AATestData/testdoubleSupport
test_drivers/AA/AATestData/testfloat.bfm
test_drivers/AA/AATestData/testfloatSupport
test_drivers/AA/AATestData/testdata2
test_drivers/AA/AATestData/testdouble.dat
test_drivers/AA/AATestData/testfloat.dat
test_drivers/AA/AATestData/testIndexFile
test_drivers/AA/AATestData/AA_PeVA_invalid1
test_drivers/AA/AATestData/AA_PeVA_invalid2
test_drivers/AA/AATestData/AA_PeVA_valid1
test_drivers/AA/AATestData/AA_PeVA_valid2
test_drivers/AA/AATestData/AA_PeVA_valid3
test_drivers/AA/AATestData/testdata1Support_dec

test_drivers/AA/AATestData/testdata2Support_dec
test_drivers/AA/AATestData/testdata2_dec
test_drivers/AA/AATestData/testdoubleSupport_dec
test_drivers/AA/AATestData/testfloatSupport_dec
test_drivers/AA/AATestData/testdata2_dec.bfm
test_drivers/AA/AATestData/testdata2Support_sgi64
test_drivers/AA/AATestData/testdata2_sgi64
test_drivers/AA/AATestData/testdata2_sgi64.bfm
test_drivers/AA/PGS_AA_PeVA_integer_Driver.in
test_drivers/AA/PGS_AA_PeVA_integer_Driver_c.out_sample
test_drivers/AA/PGS_AA_PeVA_integer_Driver_f.out_sample
test_drivers/AA/PGS_AA_PeVA_real_Driver.in
test_drivers/AA/PGS_AA_PeVA_real_Driver_c.out_sample
test_drivers/AA/PGS_AA_PeVA_real_Driver_f.out_sample
test_drivers/AA/PGS_AA_PeVA_string_Driver.in
test_drivers/AA/PGS_AA_PeVA_string_Driver_c.out_sample
test_drivers/AA/PGS_AA_2Dgeo_Driver_c.c
test_drivers/AA/PGS_AA_2Dgeo_Driver_f.f
test_drivers/AA/PGS_AA_3Dgeo_Driver_c.c
test_drivers/AA/PGS_AA_3Dgeo_Driver_f.f
test_drivers/AA/PGS_AA_dcw_Driver_c.c
test_drivers/AA/PGS_AA_dcw_Driver_f.f
test_drivers/AA/PGS_AA_dem_double_Driver_c.c
test_drivers/AA/PGS_AA_dem_double_Driver_f.f
test_drivers/AA/PGS_AA_dem_integer_Driver_c.c
test_drivers/AA/PGS_AA_dem_integer_Driver_f.f
test_drivers/AA/PGS_AA_dem_long_Driver_c.c
test_drivers/AA/PGS_AA_dem_long_Driver_f.f
test_drivers/AA/PGS_AA_dem_real_Driver_c.c

test_drivers/AA/PGS_AA_dem_real_Driver_f.f
test_drivers/AA/PGS_AA_2Dgeo_Driver.in
test_drivers/AA/PGS_AA_2Dgeo_Driver_c.out_sample
test_drivers/AA/PGS_AA_2Dgeo_Driver_f.out_sample
test_drivers/AA/PGS_AA_3Dgeo_Driver.in
test_drivers/AA/PGS_AA_3Dgeo_Driver_c.out_sample
test_drivers/AA/PGS_AA_3Dgeo_Driver_f.out_sample
test_drivers/AA/PGS_AA_dcw_Driver.in
test_drivers/AA/PGS_AA_dcw_Driver_c.out_sample
test_drivers/AA/PGS_AA_dcw_Driver_f.out_sample
test_drivers/AA/PGS_AA_dem_double_Driver.in
test_drivers/AA/PGS_AA_dem_double_Driver_c.out_sample
test_drivers/AA/PGS_AA_dem_double_Driver_f.out_sample
test_drivers/AA/PGS_AA_dem_integer_Driver.in
test_drivers/AA/PGS_AA_dem_integer_Driver_c.out_sample
test_drivers/AA/PGS_AA_dem_integer_Driver_f.out_sample
test_drivers/AA/PGS_AA_dem_long_Driver.in
test_drivers/AA/PGS_AA_dem_long_Driver_c.out_sample
test_drivers/AA/PGS_AA_dem_long_Driver_f.out_sample
test_drivers/AA/PGS_AA_dem_real_Driver.in
test_drivers/AA/PGS_AA_dem_real_Driver_c.out_sample
test_drivers/AA/PGS_AA_dem_real_Driver_f.out_sample
test_drivers/AA/PGS_AA_PeVA_string_Driver_f.out_sample
test_drivers/CBP/
test_drivers/CBP/PGS_CBP_Earth_CB_Vector_Driver_c.c
test_drivers/CBP/PGS_CBP_Sat_CB_Vector_Driver_c.c
test_drivers/CBP/makefile
test_drivers/CBP/PGS_CBP_Earth_CB_Vector_Driver_f.f
test_drivers/CBP/PGS_CBP_SolarTimeCoords_Driver_f.f

test_drivers/CBP/PGS_CBP_Sat_CB_Vector_Driver_f.f
test_drivers/CBP/PGS_CBP_SolarTimeCoords_Driver_c.c
test_drivers/CBP/PGS_CBP_Earth_CB_Vector_Driver_c.out_sample
test_drivers/CBP/PGS_CBP_Earth_CB_Vector_Driver_f.out_sample
test_drivers/CBP/PGS_CBP_Earth_CB_Vector_Driver.in
test_drivers/CBP/PGS_CBP_Sat_CB_Vector_Driver.in
test_drivers/CBP/PGS_CBP_SolarTimeCoords_Driver.in
test_drivers/CBP/PGS_CBP_SolarTimeCoords_Driver_c.out_sample
test_drivers/CBP/PGS_CBP_SolarTimeCoords_Driver_f.out_sample
test_drivers/CBP/PGS_CBP_Sat_CB_Vector_Driver_c.out_sample
test_drivers/CBP/PGS_CBP_Sat_CB_Vector_Driver_f.out_sample
test_drivers/CBP/README.CBP
test_drivers/CBP/makefile.f90
test_drivers/CBP/PGS_CBP_body_inFOV_Driver_c.c
test_drivers/CBP/PGS_CBP_body_inFOV_Driver_f.f
test_drivers/CBP/PGS_CBP_body_inFOV_Driver.in
test_drivers/CBP/PGS_CBP_body_inFOV_Driver_c.out_sample
test_drivers/CBP/PGS_CBP_body_inFOV_Driver_f.out_sample
test_drivers/CSC/
test_drivers/CSC/PGS_CSC_GreenwichHour_Driver_c.c
test_drivers/CSC/PGS_CSC_DayNight_Driver_f.f
test_drivers/CSC/PGS_CSC_ZenithAzimuth_Driver_c.c
test_drivers/CSC/makefile
test_drivers/CSC/PGS_CSC_ECItSC_Driver_c.c
test_drivers/CSC/PGS_CSC_ECItECR_Driver_c.c
test_drivers/CSC/PGS_CSC_GreenwichHour_Driver_f.f
test_drivers/CSC/PGS_CSC_ECRtoGEO_Driver_f.f
test_drivers/CSC/PGS_CSC_ECRtoGEO_Driver_c.c
test_drivers/CSC/PGS_CSC_GEOtoECR_Driver_f.f

test_drivers/CSC/PGS_CSC_ECItoSC_Driver_f.f
test_drivers/CSC/PGS_CSC_ECItoECR_Driver_f.f
test_drivers/CSC/PGS_CSC_GetFOV_Pixel_Driver_f.f
test_drivers/CSC/PGS_CSC_GetFOV_Pixel_Driver_c.c
test_drivers/CSC/PGS_CSC_ZenithAzimuth_Driver_f.f
test_drivers/CSC/PGS_CSC_GEOtoECR_Driver_c.c
test_drivers/CSC/PGS_CSC_DayNight_Driver_c.c
test_drivers/CSC/PGS_CSC_SubSatPoint_Driver_f.f
test_drivers/CSC/PGS_CSC_ECRtoECI_Driver_f.f
test_drivers/CSC/PGS_CSC_SCtoECI_Driver_f.f
test_drivers/CSC/PGS_CSC_ORBtoSC_Driver_f.f
test_drivers/CSC/PGS_CSC_SCtoORB_Driver_f.f
test_drivers/CSC/PGS_CSC_SCtoECI_Driver_c.c
test_drivers/CSC/PGS_CSC_ECRtoECI_Driver_c.c
test_drivers/CSC/PGS_CSC_ORBtoSC_Driver_c.c
test_drivers/CSC/PGS_CSC_SubSatPoint_Driver_c.c
test_drivers/CSC/PGS_CSC_SCtoORB_Driver_c.c
test_drivers/CSC/makefile.f90
test_drivers/CSC/PGS_CSC_DayNight_Driver.in
test_drivers/CSC/PGS_CSC_DayNight_Driver_c.out_sample
test_drivers/CSC/PGS_CSC_GreenwichHour_Driver_f.out_sample
test_drivers/CSC/PGS_CSC_GreenwichHour_Driver_c.out_sample
test_drivers/CSC/PGS_CSC_ZenithAzimuth_Driver_c.out_sample
test_drivers/CSC/PGS_CSC_ZenithAzimuth_Driver_f.out_sample
test_drivers/CSC/PGS_CSC_ZenithAzimuth_Driver.in
test_drivers/CSC/PGS_CSC_ECItoECR_Driver_c.out_sample
test_drivers/CSC/PGS_CSC_ECItoECR_Driver_f.out_sample
test_drivers/CSC/PGS_CSC_ECRtoECI_Driver_c.out_sample
test_drivers/CSC/PGS_CSC_ECRtoECI_Driver_f.out_sample

test_drivers/CSC/PGS_CSC_ECRtoGEO_Driver_c.out_sample
test_drivers/CSC/PGS_CSC_ECRtoGEO_Driver_f.out_sample
test_drivers/CSC/PGS_CSC_GEOtoECR_Driver_c.out_sample
test_drivers/CSC/PGS_CSC_GEOtoECR_Driver_f.out_sample
test_drivers/CSC/PGS_CSC_ECIttoECR_Driver.in
test_drivers/CSC/PGS_CSC_ECRtoECI_Driver.in
test_drivers/CSC/PGS_CSC_ECRtoGEO_Driver.in
test_drivers/CSC/PGS_CSC_GEOtoECR_Driver.in
test_drivers/CSC/PGS_CSC_SubSatPoint_Driver.in
test_drivers/CSC/PGS_CSC_ORBtoSC_Driver.in
test_drivers/CSC/PGS_CSC_SCtoORB_Driver.in
test_drivers/CSC/PGS_CSC_ORBtoSC_Driver_c.out_sample
test_drivers/CSC/PGS_CSC_ORBtoSC_Driver_f.out_sample
test_drivers/CSC/PGS_CSC_SCtoORB_Driver_c.out_sample
test_drivers/CSC/PGS_CSC_SCtoORB_Driver_f.out_sample
test_drivers/CSC/README.CSC
test_drivers/CSC/PGS_CSC_GetFOV_Pixel_Driver_c.out_sample
test_drivers/CSC/PGS_CSC_GetFOV_Pixel_Driver_f.out_sample
test_drivers/CSC/PGS_CSC_GetFOV_Pixel_Driver.in
test_drivers/CSC/PGS_CSC_ECIttoSC_Driver.in
test_drivers/CSC/PGS_CSC_SCtoECI_Driver.in
test_drivers/CSC/PGS_CSC_ECIttoSC_Driver_f.out_sample
test_drivers/CSC/PGS_CSC_SCtoECI_Driver_f.out_sample
test_drivers/CSC/PGS_CSC_ECIttoSC_Driver_c.out_sample
test_drivers/CSC/PGS_CSC_SCtoECI_Driver_c.out_sample
test_drivers/CSC/PGS_CSC_SubSatPoint_Driver_c.out_sample
test_drivers/CSC/PGS_CSC_SubSatPoint_Driver_f.out_sample
test_drivers/CSC/PGS_CSC_GreenwichHour_Driver.in
test_drivers/CSC/PGS_CSC_DayNight_Driver_f.out_sample

test_drivers/CSC/PGS_CSC_Earthpt_FOV_Driver_c.c
test_drivers/CSC/PGS_CSC_Earthpt_FOV_Driver_f.f
test_drivers/CSC/PGS_CSC_Earthpt_FOV_Driver.in
test_drivers/CSC/PGS_CSC_Earthpt_FOV_Driver_c.out_sample
test_drivers/CSC/PGS_CSC_Earthpt_FOV_Driver_f.out_sample
test_drivers/CSC/PGS_CSC_nutate2000_Driver_c.c
test_drivers/CSC/PGS_CSC_nutate2000_Driver_f.f
test_drivers/CSC/PGS_CSC_precs2000_Driver_c.c
test_drivers/CSC/PGS_CSC_precs2000_Driver_f.f
test_drivers/CSC/PGS_CSC_SpaceRefract_Driver_c.c
test_drivers/CSC/PGS_CSC_SpaceRefract_Driver_f.f
test_drivers/CSC/PGS_CSC_ECItOORB_Driver_c.c
test_drivers/CSC/PGS_CSC_ECItOORB_Driver_f.f
test_drivers/CSC/PGS_CSC_ORBtoECI_Driver_c.c
test_drivers/CSC/PGS_CSC_ORBtoECI_Driver_f.f
test_drivers/CSC/PGS_CSC_ORBtoECI_Driver_c.out_sample
test_drivers/CSC/PGS_CSC_ORBtoECI_Driver_f.out_sample
test_drivers/CSC/PGS_CSC_ORBtoECI_Driver.in
test_drivers/CSC/PGS_CSC_ECItOORB_Driver_c.out_sample
test_drivers/CSC/PGS_CSC_ECItOORB_Driver_f.out_sample
test_drivers/CSC/PGS_CSC_ECItOORB_Driver.in
test_drivers/CSC/PGS_CSC_SpaceRefract_Driver.in
test_drivers/CSC/PGS_CSC_SpaceRefract_Driver_c.out_sample
test_drivers/CSC/PGS_CSC_SpaceRefract_Driver_f.out_sample
test_drivers/CSC/PGS_CSC_nutate2000_Driver.in
test_drivers/CSC/PGS_CSC_nutate2000_Driver_c.out_sample
test_drivers/CSC/PGS_CSC_nutate2000_Driver_f.out_sample
test_drivers/CSC/PGS_CSC_precs2000_Driver.in
test_drivers/CSC/PGS_CSC_precs2000_Driver_c.out_sample

test_drivers/CSC/PGS_CSC_precs2000_Driver_f.out_sample
test_drivers/CSC/PGS_CSC_Earthpt_FixedFOV_Driver.in
test_drivers/CSC/PGS_CSC_Earthpt_FixedFOV_Driver_c.c
test_drivers/CSC/PGS_CSC_Earthpt_FixedFOV_Driver_c.out_sample
test_drivers/CSC/PGS_CSC_Earthpt_FixedFOV_Driver_f.f
test_drivers/CSC/PGS_CSC_Earthpt_FixedFOV_Driver_f.out_sample
test_drivers/CSC/PGS_CSC_J2000toTOD_Driver.in
test_drivers/CSC/PGS_CSC_J2000toTOD_Driver_c.c
test_drivers/CSC/PGS_CSC_J2000toTOD_Driver_c.out_sample
test_drivers/CSC/PGS_CSC_J2000toTOD_Driver_f.f
test_drivers/CSC/PGS_CSC_J2000toTOD_Driver_f.out_sample
test_drivers/CSC/PGS_CSC_TODtoJ2000_Driver.in
test_drivers/CSC/PGS_CSC_TODtoJ2000_Driver_c.c
test_drivers/CSC/PGS_CSC_TODtoJ2000_Driver_c.out_sample
test_drivers/CSC/PGS_CSC_TODtoJ2000_Driver_f.f
test_drivers/CSC/PGS_CSC_TODtoJ2000_Driver_f.out_sample
test_drivers/CUC/
test_drivers/CUC/PGS_CUC_Conv_Driver_c.c
test_drivers/CUC/PGS_CUC_Cons_Driver_c.c
test_drivers/CUC/makefile
test_drivers/CUC/makefile.f90
test_drivers/CUC/PGS_CUC_Conv_Driver_f.f
test_drivers/CUC/PGS_CUC_Cons_Driver_f.f
test_drivers/CUC/PGS_CUC_Conv_Driver_f.out_sample
test_drivers/CUC/PGS_CUC_Conv_Driver.in
test_drivers/CUC/README.CUC
test_drivers/CUC/PGS_CUC_Conv_Driver_c.out_sample
test_drivers/CUC/PGS_CUC_Cons_Driver.in
test_drivers/CUC/PGS_CUC_Cons_Driver_c.out_sample

test_drivers/CUC/PGS_CUC_Cons_Driver_f.out_sample
test_drivers/EPH/
test_drivers/EPH/makefile
test_drivers/EPH/PGS_EPH_EphemAttit_Driver_c.c
test_drivers/EPH/makefile.f90
test_drivers/EPH/PGS_EPH_EphemAttit_Driver.in
test_drivers/EPH/PGS_EPH_EphemAttit_Driver_f.f
test_drivers/EPH/PGS_EPH_EphemAttit_Driver_c.out_sample
test_drivers/EPH/PGS_EPH_EphemAttit_Driver_f.out_sample
test_drivers/EPH/README.EPH
test_drivers/EPH/PGS_EPH_GetEphMet_Driver.in
test_drivers/EPH/PGS_EPH_GetEphMet_Driver_c.c
test_drivers/EPH/PGS_EPH_GetEphMet_Driver_c.out_sample
test_drivers/EPH/PGS_EPH_GetEphMet_Driver_f.f
test_drivers/EPH/PGS_EPH_GetEphMet_Driver_f.out_sample
test_drivers/GCT/
test_drivers/GCT/PGS_GCT_Driver_c.c
test_drivers/GCT/makefile
test_drivers/GCT/makefile.f90
test_drivers/GCT/PGS_GCT_Driver_f.f
test_drivers/GCT/README.GCT
test_drivers/GCT/PGS_GCT_Driver_c.out_sample
test_drivers/GCT/PGS_GCT_Driver_f.out_sample
test_drivers/GCT/PGS_GCT_Driver.in
test_drivers/IO/
test_drivers/IO/GEN/
test_drivers/IO/GEN/PGS_Perm_IO_Driver1.in_c
test_drivers/IO/GEN/PGS_Perm_IO_Driver1.in_f
test_drivers/IO/GEN/PGS_Perm_IO_Driver1.in_f90

test_drivers/IO/GEN/PGS_Perm_IO_Driver1_c.out_sample
test_drivers/IO/GEN/PGS_Perm_IO_Driver1_f.out_sample
test_drivers/IO/GEN/PGS_Perm_IO_Driver1_f90.out_sample
test_drivers/IO/GEN/PGS_Perm_IO_Driver2.in_c
test_drivers/IO/GEN/PGS_Perm_IO_Driver2.in_f
test_drivers/IO/GEN/PGS_Perm_IO_Driver2.in_f90
test_drivers/IO/GEN/PGS_Perm_IO_Driver2_c.out_sample
test_drivers/IO/GEN/PGS_Perm_IO_Driver2_f.out_sample
test_drivers/IO/GEN/PGS_Perm_IO_Driver2_f90.out_sample
test_drivers/IO/GEN/PGS_Perm_IO_Driver8.in_c
test_drivers/IO/GEN/PGS_Perm_IO_Driver8.in_f
test_drivers/IO/GEN/PGS_Perm_IO_Driver8.in_f90
test_drivers/IO/GEN/PGS_Perm_IO_Driver8_c.out_sample
test_drivers/IO/GEN/PGS_Perm_IO_Driver8_f.out_sample
test_drivers/IO/GEN/PGS_Perm_IO_Driver8_f90.out_sample
test_drivers/IO/GEN/PGS_Perm_IO_Driver9a.in_c
test_drivers/IO/GEN/PGS_Perm_IO_Driver9a.in_f
test_drivers/IO/GEN/PGS_Perm_IO_Driver9a.in_f90
test_drivers/IO/GEN/PGS_Perm_IO_Driver9a_c.out_sample
test_drivers/IO/GEN/PGS_Perm_IO_Driver9a_f.out_sample
test_drivers/IO/GEN/PGS_Perm_IO_Driver9a_f90.out_sample
test_drivers/IO/GEN/PGS_Perm_IO_Driver_INIT1.in_f
test_drivers/IO/GEN/PGS_Perm_IO_Driver_INIT1.in_f90
test_drivers/IO/GEN/PGS_Perm_IO_Driver_INIT2.in_f
test_drivers/IO/GEN/PGS_Perm_IO_Driver_INIT2.in_f90
test_drivers/IO/GEN/PGS_Perm_IO_Driver_INIT3.in_f
test_drivers/IO/GEN/PGS_Perm_IO_Driver_INIT3.in_f90
test_drivers/IO/GEN/PGS_Perm_IO_Driver_c.c
test_drivers/IO/GEN/PGS_Perm_IO_Driver_f.f

test_drivers/IO/GEN/PGS_Perm_IO_Driver_f90.f
test_drivers/IO/GEN/PGS_Temp_IO_Driver3.in_c
test_drivers/IO/GEN/PGS_Temp_IO_Driver3.in_f
test_drivers/IO/GEN/PGS_Temp_IO_Driver3.in_f90
test_drivers/IO/GEN/PGS_Temp_IO_Driver3_c.out_sample
test_drivers/IO/GEN/PGS_Temp_IO_Driver3_f.out_sample
test_drivers/IO/GEN/PGS_Temp_IO_Driver3_f90.out_sample
test_drivers/IO/GEN/PGS_Temp_IO_Driver4.in_c
test_drivers/IO/GEN/PGS_Temp_IO_Driver4.in_f
test_drivers/IO/GEN/PGS_Temp_IO_Driver4.in_f90
test_drivers/IO/GEN/PGS_Temp_IO_Driver4_c.out_sample
test_drivers/IO/GEN/PGS_Temp_IO_Driver4_f.out_sample
test_drivers/IO/GEN/PGS_Temp_IO_Driver4_f90.out_sample
test_drivers/IO/GEN/PGS_Temp_IO_Driver5.in_c
test_drivers/IO/GEN/PGS_Temp_IO_Driver5.in_f
test_drivers/IO/GEN/PGS_Temp_IO_Driver5.in_f90
test_drivers/IO/GEN/PGS_Temp_IO_Driver5_c.out_sample
test_drivers/IO/GEN/PGS_Temp_IO_Driver5_f.out_sample
test_drivers/IO/GEN/PGS_Temp_IO_Driver5_f90.out_sample
test_drivers/IO/GEN/PGS_Temp_IO_Driver6.in_c
test_drivers/IO/GEN/PGS_Temp_IO_Driver6.in_f
test_drivers/IO/GEN/PGS_Temp_IO_Driver6.in_f90
test_drivers/IO/GEN/PGS_Temp_IO_Driver6_c.out_sample
test_drivers/IO/GEN/PGS_Temp_IO_Driver6_f.out_sample
test_drivers/IO/GEN/PGS_Temp_IO_Driver6_f90.out_sample
test_drivers/IO/GEN/PGS_Temp_IO_Driver7.in_c
test_drivers/IO/GEN/PGS_Temp_IO_Driver7.in_f
test_drivers/IO/GEN/PGS_Temp_IO_Driver7.in_f90
test_drivers/IO/GEN/PGS_Temp_IO_Driver7_c.out_sample

test_drivers/IO/GEN/PGS_Temp_IO_Driver7_f.out_sample
test_drivers/IO/GEN/PGS_Temp_IO_Driver7_f90.out_sample
test_drivers/IO/GEN/PGS_Temp_IO_Driver9b.in_c
test_drivers/IO/GEN/PGS_Temp_IO_Driver9b.in_f
test_drivers/IO/GEN/PGS_Temp_IO_Driver9b.in_f90
test_drivers/IO/GEN/PGS_Temp_IO_Driver9b_c.out_sample
test_drivers/IO/GEN/PGS_Temp_IO_Driver9b_f.out_sample
test_drivers/IO/GEN/PGS_Temp_IO_Driver9b_f90.out_sample
test_drivers/IO/GEN/PGS_Temp_IO_Driver_c.c
test_drivers/IO/GEN/PGS_Temp_IO_Driver_f.f
test_drivers/IO/GEN/PGS_Temp_IO_Driver_f90.f
test_drivers/IO/GEN/refresh_c
test_drivers/IO/GEN/refresh_f
test_drivers/IO/GEN/refresh_f90
test_drivers/IO/GEN/logdata
test_drivers/IO/GEN/mkdatadirs
test_drivers/IO/GEN/makefile
test_drivers/IO/GEN/makefile.f90
test_drivers/IO/GEN/README.IO
test_drivers/IO/GEN/PGS_SH_IO.in
test_drivers/IO/GEN/io-env.setup
test_drivers/IO/L0/
test_drivers/IO/L0/PGS_IO_L0_Driver_f.f
test_drivers/IO/L0/PGS_IO_L0_Driver_c.c
test_drivers/IO/L0/makefile
test_drivers/IO/L0/makefile.f90
test_drivers/IO/L0/README.L0
test_drivers/IO/L0/PGS_IO_L0_Driver.in
test_drivers/IO/L0/PGS_IO_L0_Driver_c.out_sample

test_drivers/IO/L0/runL0sim.csh
test_drivers/IO/L0/L0sim.EOSAM.input
test_drivers/IO/L0/L0sim.EOSPM.input
test_drivers/IO/L0/L0sim.TRMM.input
test_drivers/IO/L0/L0sim.TRMM1.input
test_drivers/IO/L0/PGS_IO_L0_Driver_f.out_sample
test_drivers/MEM/
test_drivers/MEM/PGS_DYN_MEM_Driver_c.c
test_drivers/MEM/makefile
test_drivers/MEM/PGS_SHM_MEM_Driver_c.c
test_drivers/MEM/README.MEM
test_drivers/MEM/PGS_DYN_MEM_Driver1.in
test_drivers/MEM/PGS_DYN_MEM_Driver2.in
test_drivers/MEM/PGS_SHM_MEM_Driver1.sh
test_drivers/MEM/PGS_SHM_MEM_Driver2.sh
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test_drivers/MEM/PGS_SHM_MEM_Driver4.sh
test_drivers/MEM/PGS_SHM_MEM_Driver5.sh
test_drivers/MEM/PGS_SHM_MEM_Driver6.sh
test_drivers/MEM/PGS_SHM_MEM_Driver7.sh
test_drivers/MEM/PGS_SHM_MEM_Driver8.sh
test_drivers/MEM/PGS_SHM_MEM_Driver9.sh
test_drivers/MEM/PGS_SHM_MEM_Driver10.sh
test_drivers/MEM/PGS_SHM_MEM_Driver11.sh
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test_drivers/MEM/PGS_SHM_MEM_Driver2.in
test_drivers/MEM/PGS_SHM_MEM_Driver3.in
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test_drivers/MEM/PGS_SHM_MEM_Driver8.in

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test_drivers/MEM/PGS_SHM_MEM_Driver10.in
test_drivers/MEM/PGS_SHM_MEM_Driver11.in
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test_drivers/MEM/PGS_DYN_MEM_Driver1_c.out_sample
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test_drivers/MEM/PGS_SHM_MEM_Driver.term
test_drivers/MEM/PGS_SHM_MEM_Driver1_c.out_sample
test_drivers/MEM/PGS_SHM_MEM_Driver2_c.out_sample
test_drivers/MEM/PGS_SHM_MEM_Driver10_c.out_sample
test_drivers/MEM/PGS_SHM_MEM_Driver11_c.out_sample
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test_drivers/MEM/PGS_SHM_MEM_Driver4_c.out_sample
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test_drivers/MEM/PGS_SHM_MEM_Driver9_c.out_sample
test_drivers/MEM/makefile.f90
test_drivers/MEM/PGS_SHM_MEM_Driver_f.f
test_drivers/MEM/PGS_SHM_MEM_Driver2_f.out_sample
test_drivers/MEM/PGS_SHM_MEM_Driver2.in_f
test_drivers/MEM/PGS_SHM_MEM_Driver1_f.out_sample
test_drivers/MEM/PGS_SHM_MEM_Driver1.in_f
test_drivers/MEM/PGS_SHM_MEM_Driver.sh_f
test_drivers/MET/
test_drivers/MET/PGS_MET_Driver_c.c
test_drivers/MET/makefile
test_drivers/MET/PGS_MET_Driver_f.f
test_drivers/MET/MET_TestData/
test_drivers/MET/MET_TestData/MCFfile
test_drivers/MET/MET_TestData/MCFfile_1

test_drivers/MET/MET_TestData/MCFfile_3
test_drivers/MET/MET_TestData/MCFfile_6
test_drivers/MET/MET_TestData/data_dict
test_drivers/MET/MET_TestData/MCFfile_8
test_drivers/MET/MET_TestData/LISUSR
test_drivers/MET/MET_TestData/MOP_THRESH
test_drivers/MET/makefile.f90
test_drivers/MET/PGS_MET_Driver.in
test_drivers/MET/PGS_MET_Driver_f.out_sample
test_drivers/MET/PGS_MET_Driver_c.out_sample
test_drivers/MET/README.MET
test_drivers/PC/
test_drivers/PC/PGS_PC_GenUniqueID_Driver_c.c
test_drivers/PC/PGS_PC_GetConfigData_Driver_c.c
test_drivers/PC/PGS_PC_GetNumberOfFiles_Driver_c.c
test_drivers/PC/PGS_PC_GetReference_Driver_c.c
test_drivers/PC/makefile
test_drivers/PC/PGS_PC_GenUniqueID_Driver_f.f
test_drivers/PC/PGS_PC_GetConfigData_Driver_f.f
test_drivers/PC/PGS_PC_GetNumberOfFiles_Driver_f.f
test_drivers/PC/PGS_PC_GetReference_Driver_f.f
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test_drivers/PC/PGS_PC_GetFileByAttr_Driver_c.c
test_drivers/PC/PGS_PC_GetFileAttr_Driver_f.f
test_drivers/PC/PGS_PC_GetFileByAttr_Driver_f.f
test_drivers/PC/makefile.f90
test_drivers/PC/modis.attr1999_017
test_drivers/PC/modis.attr1999_018
test_drivers/PC/modis.attr1999_019

test_drivers/PC/modis.attr1999_020
test_drivers/PC/modis.v1999_017
test_drivers/PC/modis.v1999_018
test_drivers/PC/modis.v1999_019
test_drivers/PC/modis.v1999_020
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test_drivers/PC/PGS_PC_GetReference_Driver_f.out_sample
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test_drivers/PC/PGS_PC_GetFileByAttr_Driver.in
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test_drivers/PC/PGS_PC_GetReference_Driver.in
test_drivers/PC/PGS_PC_GetFileAttr_Driver_c.out_sample
test_drivers/PC/PGS_PC_GetFileAttr_Driver_f.out_sample
test_drivers/PC/README.PC
test_drivers/PC/PGS_PC_GetConfigDataCom_Driver.in
test_drivers/PC/PGS_PC_GetFileAttrCom_Driver.csh.in
test_drivers/PC/PGS_PC_GetFileAttrCom_Driver.sh.in
test_drivers/PC/PGS_PC_GetNumberOfFilesCom_Driver.in
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test_drivers/PC/PGS_PC_GetFileAttrCom_Driver.sh
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test_drivers/PC/PGS_PC_GetTempReferenceCom_Driver.sh
test_drivers/PC/PGS_PC_TempDeleteCom_Driver.sh
test_drivers/PC/PGS_PC_GetConfigDataCom_Driver.csh
test_drivers/PC/PGS_PC_GetFileAttrCom_Driver.csh
test_drivers/PC/PGS_PC_GetNumberOfFilesCom_Driver.csh
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test_drivers/PC/PGS_PC_GetTempReferenceCom_Driver.csh
test_drivers/PC/PGS_PC_TempDeleteCom_Driver.csh
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test_drivers/PC/PGS_PC_GetConfigDataCom_Driver.sh.out_sample
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test_drivers/PC/PGS_PC_GetFileAttrCom_Driver.sh.out_sample
test_drivers/PC/PGS_PC_GetNumberOfFilesCom_Driver.csh.out_sample
test_drivers/PC/PGS_PC_GetNumberOfFilesCom_Driver.sh.out_sample
test_drivers/PC/PGS_PC_GetReferenceCom_Driver.csh.out_sample
test_drivers/PC/PGS_PC_GetReferenceCom_Driver.sh.out_sample
test_drivers/PC/PGS_PC_GetTempReferenceCom_Driver.csh.out_sample
test_drivers/PC/PGS_PC_GetTempReferenceCom_Driver.sh.out_sample
test_drivers/PC/PGS_PC_TempDeleteCom_Driver.csh.out_sample

test_drivers/PC/PGS_PC_TempDeleteCom_Driver.sh.out_sample
test_drivers/PC/PGS_PC_GetReferenceType_Driver_c.c
test_drivers/PC/PGS_PC_GetReferenceType_Driver_f.f
test_drivers/PC/PGS_PC_GetReferenceType_Driver.in
test_drivers/PC/PGS_PC_GetReferenceType_Driver_c.out_sample
test_drivers/PC/PGS_PC_GetReferenceType_Driver_f.out_sample
test_drivers/PC/PGS_PC_Shell_Driver.csh
test_drivers/PC/PGS_PC_Shell_Driver.csh.out_sample
test_drivers/PC/pctcheck.out_sample
test_drivers/PC/PGS_PC_GetUniversalRef_Driver.in
test_drivers/PC/PGS_PC_GetUniversalRef_Driver_c.c
test_drivers/PC/PGS_PC_GetUniversalRef_Driver_c.out_sample
test_drivers/PC/PGS_PC_GetUniversalRef_Driver_f.f
test_drivers/PC/PGS_PC_GetUniversalRef_Driver_f.out_sample
test_drivers/SMF/
test_drivers/SMF/PGS_SMF_GetActionByCode_Driver_f.f
test_drivers/SMF/PGS_SMF_GetInstrName_Driver_f.f
test_drivers/SMF/PGS_SMF_GetMsgByCode_Driver_f.f
test_drivers/SMF/PGS_SMF_TestNoticeLevel_Driver_f.f
test_drivers/SMF/PGS_SMF_TestStatusLevel_Driver_f.f
test_drivers/SMF/PGS_SMF_TestFatalLevel_Driver_f.f
test_drivers/SMF/PGS_SMF_TestUserInfoLevel_Driver_f.f
test_drivers/SMF/PGS_SMF_TestWarningLevel_Driver_f.f
test_drivers/SMF/makefile
test_drivers/SMF/PGS_SMF_CreateMsgTag_Driver_c.c
test_drivers/SMF/PGS_SMF_GetInstrName_Driver_c.c
test_drivers/SMF/PGS_SMF_GetMsg_Driver_c.c
test_drivers/SMF/PGS_SMF_TestErrorLevel_Driver_c.c
test_drivers/SMF/PGS_SMF_CreateMsgTag_Driver_f.f

test_drivers/SMF/PGS_SMF_GenerateStatusReport_Driver_f.f
test_drivers/SMF/PGS_SMF_TestNoticeLevel_Driver_c.c
test_drivers/SMF/PGS_SMF_TestStatusLevel_Driver_c.c
test_drivers/SMF/PGS_SMF_TestSuccessLevel_Driver_c.c
test_drivers/SMF/PGS_SMF_TestUserInfoLevel_Driver_c.c
test_drivers/SMF/PGS_SMF_TestWarningLevel_Driver_c.c
test_drivers/SMF/PGS_SMF_TestMessageLevel_Driver_c.c
test_drivers/SMF/PGS_SMF_TestMessageLevel_Driver_f.f
test_drivers/SMF/PGS_SMF_TestSuccessLevel_Driver_f.f
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test_drivers/SMF/PGS_SMF_GetMsgByCode_Driver_c.c
test_drivers/SMF/PGS_SMF_SendRuntimeData_Driver_f.f
test_drivers/SMF/PGS_SMF_GetMsg_Driver_f.f
test_drivers/SMF/PGS_SMF_TestErrorLevel_Driver_f.f
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test_drivers/SMF/AVHRR_99.t
test_drivers/SMF/.netrc
test_drivers/SMF/PGS_SMF_GenerateStatusReport_Driver_c.out_sample
test_drivers/SMF/PGS_SMF_GenerateStatusReport_Driver_f.out_sample
test_drivers/SMF/PGS_SMF_GetActionByCode_Driver_c.out_sample
test_drivers/SMF/PGS_SMF_GetActionByCode_Driver_f.out_sample
test_drivers/SMF/PGS_SMF_GetInstrName_Driver_c.out_sample
test_drivers/SMF/PGS_SMF_GetInstrName_Driver_f.out_sample
test_drivers/SMF/PGS_SMF_GetMsgByCode_Driver_c.out_sample
test_drivers/SMF/PGS_SMF_GetMsgByCode_Driver_f.out_sample

test_drivers/SMF/PGS_SMF_GetMsg_Driver_c.out_sample
test_drivers/SMF/PGS_SMF_GetMsg_Driver_f.out_sample
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test_drivers/SMF/PGS_SMF_TestStatusLevel_Driver_f.out_sample
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test_drivers/SMF/PGS_SMF_GetActionByCode_Driver.in
test_drivers/SMF/PGS_SMF_GetInstrName_Driver.in
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test_drivers/SMF/PGS_SMF_GetMsgByCode_Driver.in
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test_drivers/SMF/PGS_SMF_SendRuntimeData_Driver2.in
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test_drivers/SMF/PGS_SMF_TestMessageLevel_Driver.in
test_drivers/SMF/PGS_SMF_TestNoticeLevel_Driver.in
test_drivers/SMF/PGS_SMF_TestSuccessLevel_Driver.in
test_drivers/SMF/PGS_SMF_TestUserInfoLevel_Driver.in
test_drivers/SMF/PGS_SMF_TestWarningLevel_Driver.in
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test_drivers/SMF/PGS_SMF_CreateMsgTag_Driver1_f.out_sample
test_drivers/SMF/PGS_SMF_CreateMsgTag_Driver2_c.out_sample
test_drivers/SMF/PGS_SMF_CreateMsgTag_Driver2_f.out_sample
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test_drivers/SMF/PGS_SMF_SendRuntimeData_Driver2_c.out_sample
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test_drivers/SMF/PGS_SMF_TestErrorLevel_Driver_c.out_sample
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test_drivers/SMF/PGS_SMF_TestWarningLevel_Driver_c.out_sample
test_drivers/SMF/PGS_SMF_TestWarningLevel_Driver_f.out_sample
test_drivers/SMF/PGS_99_sample
test_drivers/SMF/PGS_SMF_SendRuntimeData_Driver_c.csh
test_drivers/SMF/PGS_SMF_SendRuntimeData_Driver_f.csh
test_drivers/SMF/PGS_SMF_EventLogger_Driver.csh
test_drivers/SMF/PGS_SMF_EventLogger_Driver.in
test_drivers/SMF/PGS_SMF_EventLogger_Driver_c.c
test_drivers/SMF/PGS_SMF_EventLogger_Driver_c.out_sample
test_drivers/SMF/PGS_SMF_LogStatus_Driver.csh
test_drivers/SMF/PGS_SMF_LogStatus_Driver_c.c
test_drivers/SMF/PGS_SMF_LogStatus_Driver10_c.out_sample
test_drivers/SMF/PGS_SMF_LogStatus_Driver11_c.out_sample
test_drivers/SMF/PGS_SMF_LogStatus_Driver12_c.out_sample
test_drivers/SMF/PGS_SMF_LogStatus_Driver13_c.out_sample
test_drivers/SMF/PGS_SMF_LogStatus_Driver14_c.out_sample
test_drivers/SMF/PGS_SMF_LogStatus_Driver15_c.out_sample

test_drivers/SMF/PGS_SMF_LogStatus_Driver16_c.out_sample
test_drivers/SMF/PGS_SMF_LogStatus_Driver17_c.out_sample
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test_drivers/SMF/PGS_SMF_LogStatus_Driver19_c.out_sample
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test_drivers/SMF/PGS_SMF_LogStatus_Driver9_c.out_sample
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test_drivers/TD/PGS_TD_TimeInterval_Driver_c.c
test_drivers/TD/PGS_TD_UTCtoGPS_Driver_c.c
test_drivers/TD/PGS_TD_UTCtoTAI_Driver_c.c
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test_drivers/TD/PGS_TD_ASCIItime_BtoA_Driver_f.f

test_drivers/TD/PGS_TD_GPStoUTC_Driver_f.f
test_drivers/TD/PGS_TD_TAItoUTC_Driver_f.f
test_drivers/TD/PGS_TD_TimeInterval_Driver_f.f
test_drivers/TD/PGS_TD_UTCtoGPS_Driver_f.f
test_drivers/TD/PGS_TD_UTCtoTAI_Driver_f.f
test_drivers/TD/PGS_TD_UTCtoTDBjed_Driver_f.f
test_drivers/TD/PGS_TD_UTCtoTDTjed_Driver_f.f
test_drivers/TD/PGS_TD_UTCtoUT1_Driver_f.f
test_drivers/TD/PGS_TD_Sctime_to_UTC_Driver_f.f
test_drivers/TD/PGS_TD_UTC_to_Sctime_Driver_f.f
test_drivers/TD/makefile.f90
test_drivers/TD/PGS_TD_GPStoUTC_Driver.in
test_drivers/TD/PGS_TD_TAItoUTC_Driver.in
test_drivers/TD/PGS_TD_TimeInterval_Driver.in
test_drivers/TD/PGS_TD_UTCtoGPS_Driver.in
test_drivers/TD/PGS_TD_UTCtoTAI_Driver.in
test_drivers/TD/PGS_TD_UTCtoTDBjed_Driver.in
test_drivers/TD/PGS_TD_UTCtoTDTjed_Driver.in
test_drivers/TD/PGS_TD_UTCtoUT1_Driver.in
test_drivers/TD/README.TD
test_drivers/TD/PGS_TD_ASCIItime_AtoB_Driver.in
test_drivers/TD/PGS_TD_ASCIItime_BtoA_Driver.in
test_drivers/TD/PGS_TD_ASCIItime_BtoA_Driver_c.out_sample
test_drivers/TD/PGS_TD_ASCIItime_AtoB_Driver_c.out_sample
test_drivers/TD/PGS_TD_ASCIItime_AtoB_Driver_f.out_sample
test_drivers/TD/PGS_TD_GPStoUTC_Driver_f.out_sample
test_drivers/TD/PGS_TD_GPStoUTC_Driver_c.out_sample
test_drivers/TD/PGS_TD_Sctime_to_UTC_Driver.in
test_drivers/TD/PGS_TD_Sctime_to_UTC_Driver_c.out_sample

test_drivers/TD/PGS_TD_TAItoUTC_Driver_f.out_sample
test_drivers/TD/PGS_TD_TAItoUTC_Driver_c.out_sample
test_drivers/TD/PGS_TD_TimeInterval_Driver_c.out_sample
test_drivers/TD/PGS_TD_TimeInterval_Driver_f.out_sample
test_drivers/TD/PGS_TD_UTC_to_Sctime_Driver.in
test_drivers/TD/PGS_TD_UTC_to_Sctime_Driver_c.out_sample
test_drivers/TD/PGS_TD_UTC_to_Sctime_Driver_f.out_sample
test_drivers/TD/PGS_TD_UTCtoGPS_Driver_c.out_sample
test_drivers/TD/PGS_TD_UTCtoGPS_Driver_f.out_sample
test_drivers/TD/PGS_TD_UTCtoTAI_Driver_c.out_sample
test_drivers/TD/PGS_TD_UTCtoTAI_Driver_f.out_sample
test_drivers/TD/PGS_TD_UTCtoTDBjed_Driver_c.out_sample
test_drivers/TD/PGS_TD_UTCtoTDBjed_Driver_f.out_sample
test_drivers/TD/PGS_TD_UTCtoTDTjed_Driver_c.out_sample
test_drivers/TD/PGS_TD_UTCtoTDTjed_Driver_f.out_sample
test_drivers/TD/PGS_TD_UTCtoUT1_Driver_c.out_sample
test_drivers/TD/PGS_TD_UTCtoUT1_Driver_f.out_sample
test_drivers/TD/PGS_TD_ASCIItime_BtoA_Driver_f.out_sample
test_drivers/TD/PGS_TD_Sctime_to_UTC_Driver_f.out_sample
test_drivers/TD/PGS_TD_UTCtoUT1jd_Driver_c.c
test_drivers/TD/PGS_TD_UTCtoUT1jd_Driver_f.f
test_drivers/TD/PGS_TD_TAItoGAST_Driver_c.c
test_drivers/TD/PGS_TD_TAItoGAST_Driver_f.f
test_drivers/TD/PGS_TD_UTCtoUT1jd_Driver.in
test_drivers/TD/PGS_TD_UTCtoUT1jd_Driver_c.out_sample
test_drivers/TD/PGS_TD_UTCtoUT1jd_Driver_f.out_sample
test_drivers/TD/PGS_TD_TAItoGAST_Driver.in
test_drivers/TD/PGS_TD_TAItoGAST_Driver_c.out_sample
test_drivers/TD/PGS_TD_TAItoGAST_Driver_f.out_sample

test_drivers/TD/PGS_TD_UTCtoUTCjd_Driver.in
test_drivers/TD/PGS_TD_UTCtoUTCjd_Driver_c.c
test_drivers/TD/PGS_TD_UTCtoUTCjd_Driver_c.out_sample
test_drivers/TD/PGS_TD_UTCtoUTCjd_Driver_f.f
test_drivers/TD/PGS_TD_UTCtoUTCjd_Driver_f.out_sample
test_drivers/TD/PGS_TD_UTCjdtoUTC_Driver.in
test_drivers/TD/PGS_TD_UTCjdtoUTC_Driver_c.c
test_drivers/TD/PGS_TD_UTCjdtoUTC_Driver_c.out_sample
test_drivers/TD/PGS_TD_UTCjdtoUTC_Driver_f.f
test_drivers/TD/PGS_TD_UTCjdtoUTC_Driver_f.out_sample
test_drivers/TD/PGS_TD_TAItoTAIjd_Driver.in
test_drivers/TD/PGS_TD_TAItoTAIjd_Driver_c.c
test_drivers/TD/PGS_TD_TAItoTAIjd_Driver_c.out_sample
test_drivers/TD/PGS_TD_TAItoTAIjd_Driver_f.f
test_drivers/TD/PGS_TD_TAItoTAIjd_Driver_f.out_sample
test_drivers/TD/PGS_TD_TAIjdtoTAL_Driver.in
test_drivers/TD/PGS_TD_TAIjdtoTAL_Driver_c.c
test_drivers/TD/PGS_TD_TAIjdtoTAL_Driver_c.out_sample
test_drivers/TD/PGS_TD_TAIjdtoTAL_Driver_f.f
test_drivers/TD/PGS_TD_TAIjdtoTAL_Driver_f.out_sample
test_drivers/README
test_drivers/Common/
test_drivers/Common/Create_filename_f90.f
test_drivers/Common/Create_filename_f77.f
test_drivers/Common/rundrivers.csh
test_drivers/Common/runMEM.csh
test_drivers/Common/runPC.csh
test_drivers/Common/runSMF.csh
test_drivers/Common/cleanup.csh

test_drivers/Common/orbsim.in
test_drivers/Common/runL0.csh
test_drivers/Common/runIO.csh
test_drivers/Common/runAA.csh
test_drivers/Common/runTests
test_drivers/Common/PCF.baseline
test_drivers/Common/createPCF.csh
test_drivers/Common/runMET.csh
test_drivers/Common/README.script
test_drivers/Common/runCBP.csh
test_drivers/Common/runCSC.csh
test_drivers/Common/runEPH.csh
test_drivers/Common/runTD.csh

4.3 Hierarchical Data Files Listing

Release A Toolkit 5.1.1 HDF4.0r2.tar.Z tar file listing follows:

HDF4.0r2/
HDF4.0r2/config/
HDF4.0r2/config/mh-aix
HDF4.0r2/config/mh-alpha
HDF4.0r2/config/mh-cm5
HDF4.0r2/config/mh-convex
HDF4.0r2/config/mh-decstation
HDF4.0r2/config/mh-fbsd
HDF4.0r2/config/mh-fujjvp
HDF4.0r2/config/mh-hpux
HDF4.0r2/config/mh-irix32
HDF4.0r2/config/mh-irix4
HDF4.0r2/config/mh-irix5
HDF4.0r2/config/mh-irix6

HDF4.0r2/config/mh-linux
HDF4.0r2/config/mh-mac
HDF4.0r2/config/mh-solaris
HDF4.0r2/config/mh-solarisx86
HDF4.0r2/config/mh-sun
HDF4.0r2/config/mh-t3d
HDF4.0r2/config/mh-unicos
HDF4.0r2/hdf/
HDF4.0r2/hdf/fmpool/
HDF4.0r2/hdf/fmpool/config/
HDF4.0r2/hdf/fmpool/config/fmpaix.h
HDF4.0r2/hdf/fmpool/config/fmpalpha.h
HDF4.0r2/hdf/fmpool/config/fmpcm5.h
HDF4.0r2/hdf/fmpool/config/fmpconvex.h
HDF4.0r2/hdf/fmpool/config/fmpdec.h
HDF4.0r2/hdf/fmpool/config/fmpfsd.h
HDF4.0r2/hdf/fmpool/config/fmpfujivp.h
HDF4.0r2/hdf/fmpool/config/fmphpux.h
HDF4.0r2/hdf/fmpool/config/fmpirix32.h
HDF4.0r2/hdf/fmpool/config/fmpirix4.h
HDF4.0r2/hdf/fmpool/config/fmpirix5.h
HDF4.0r2/hdf/fmpool/config/fmpirix6.h
HDF4.0r2/hdf/fmpool/config/fmplinux.h
HDF4.0r2/hdf/fmpool/config/fmpmac.h
HDF4.0r2/hdf/fmpool/config/fmpsolaris.h
HDF4.0r2/hdf/fmpool/config/fmpsun.h
HDF4.0r2/hdf/fmpool/config/fmpt3d.h
HDF4.0r2/hdf/fmpool/config/fmpunicos.h
HDF4.0r2/hdf/fmpool/config/mh-aix

HDF4.0r2/hdf/fmpool/config/mh-alpha
HDF4.0r2/hdf/fmpool/config/mh-cm5
HDF4.0r2/hdf/fmpool/config/mh-convex
HDF4.0r2/hdf/fmpool/config/mh-fbsd
HDF4.0r2/hdf/fmpool/config/mh-decstation
HDF4.0r2/hdf/fmpool/config/mh-fujivp
HDF4.0r2/hdf/fmpool/config/mh-hpux
HDF4.0r2/hdf/fmpool/config/mh-irix32
HDF4.0r2/hdf/fmpool/config/mh-irix4
HDF4.0r2/hdf/fmpool/config/mh-irix5
HDF4.0r2/hdf/fmpool/config/mh-irix6
HDF4.0r2/hdf/fmpool/config/mh-linux
HDF4.0r2/hdf/fmpool/config/mh-mac
HDF4.0r2/hdf/fmpool/config/mh-solaris
HDF4.0r2/hdf/fmpool/config/mh-sun
HDF4.0r2/hdf/fmpool/config/mh-t3d
HDF4.0r2/hdf/fmpool/config/mh-unicos
HDF4.0r2/hdf/fmpool/Makefile.in
HDF4.0r2/hdf/fmpool/README
HDF4.0r2/hdf/fmpool/cdefs.h
HDF4.0r2/hdf/fmpool/compat.h
HDF4.0r2/hdf/fmpool/config.guess
HDF4.0r2/hdf/fmpool/config.sub
HDF4.0r2/hdf/fmpool/configure
HDF4.0r2/hdf/fmpool/configure.in
HDF4.0r2/hdf/fmpool/fmpio.3
HDF4.0r2/hdf/fmpool/fmpio.c
HDF4.0r2/hdf/fmpool/fmpio.h
HDF4.0r2/hdf/fmpool/fmpool.3

HDF4.0r2/hdf/fmpool/fmpool.c
HDF4.0r2/hdf/fmpool/fmpool.h
HDF4.0r2/hdf/fmpool/fmptypes.h
HDF4.0r2/hdf/fmpool/move-if-change
HDF4.0r2/hdf/fmpool/queue.h
HDF4.0r2/hdf/fmpool/test_fmpio.c
HDF4.0r2/hdf/fmpool/tfmpio_read.c
HDF4.0r2/hdf/fmpool/tfmpio_write.c
HDF4.0r2/hdf/jpeg/
HDF4.0r2/hdf/jpeg/config/
HDF4.0r2/hdf/jpeg/config/jaix.h
HDF4.0r2/hdf/jpeg/config/jalpha.h
HDF4.0r2/hdf/jpeg/config/jcm5.h
HDF4.0r2/hdf/jpeg/config/jconvex.h
HDF4.0r2/hdf/jpeg/config/jdec.h
HDF4.0r2/hdf/jpeg/config/jfbsd.h
HDF4.0r2/hdf/jpeg/config/jfujivp.h
HDF4.0r2/hdf/jpeg/config/jhpux.h
HDF4.0r2/hdf/jpeg/config/jirix32.h
HDF4.0r2/hdf/jpeg/config/jirix4.h
HDF4.0r2/hdf/jpeg/config/jirix5.h
HDF4.0r2/hdf/jpeg/config/jirix6.h
HDF4.0r2/hdf/jpeg/config/jlinux.h
HDF4.0r2/hdf/jpeg/config/jmac.h
HDF4.0r2/hdf/jpeg/config/jsolaris.h
HDF4.0r2/hdf/jpeg/config/jsun.h
HDF4.0r2/hdf/jpeg/config/jt3d.h
HDF4.0r2/hdf/jpeg/config/junicos.h
HDF4.0r2/hdf/jpeg/config/jwin32.h

HDF4.0r2/hdf/jpeg/config/mh-aix
HDF4.0r2/hdf/jpeg/config/mh-alpha
HDF4.0r2/hdf/jpeg/config/mh-cm5
HDF4.0r2/hdf/jpeg/config/mh-convex
HDF4.0r2/hdf/jpeg/config/mh-decstation
HDF4.0r2/hdf/jpeg/config/mh-fbsd
HDF4.0r2/hdf/jpeg/config/mh-fujivp
HDF4.0r2/hdf/jpeg/config/mh-hpux
HDF4.0r2/hdf/jpeg/config/mh-irix32
HDF4.0r2/hdf/jpeg/config/mh-irix4
HDF4.0r2/hdf/jpeg/config/mh-irix5
HDF4.0r2/hdf/jpeg/config/mh-irix6
HDF4.0r2/hdf/jpeg/config/mh-linux
HDF4.0r2/hdf/jpeg/config/mh-mac
HDF4.0r2/hdf/jpeg/config/mh-solaris
HDF4.0r2/hdf/jpeg/config/mh-sun
HDF4.0r2/hdf/jpeg/config/mh-t3d
HDF4.0r2/hdf/jpeg/config/mh-unicos
HDF4.0r2/hdf/jpeg/config/win32jpg.mak
HDF4.0r2/hdf/jpeg/Makefile.in
HDF4.0r2/hdf/jpeg/README
HDF4.0r2/hdf/jpeg/ansi2knr.1
HDF4.0r2/hdf/jpeg/ansi2knr.c
HDF4.0r2/hdf/jpeg/cderror.h
HDF4.0r2/hdf/jpeg/cdjpeg.c
HDF4.0r2/hdf/jpeg/cdjpeg.h
HDF4.0r2/hdf/jpeg/change.log
HDF4.0r2/hdf/jpeg/cjpeg.1
HDF4.0r2/hdf/jpeg/cjpeg.c

HDF4.0r2/hdf/jpeg/ckconfig.c
HDF4.0r2/hdf/jpeg/coderules.doc
HDF4.0r2/hdf/jpeg/configure.gnu
HDF4.0r2/hdf/jpeg/configure.in
HDF4.0r2/hdf/jpeg/djpeg.1
HDF4.0r2/hdf/jpeg/djpeg.c
HDF4.0r2/hdf/jpeg/example.c
HDF4.0r2/hdf/jpeg/filelist.doc
HDF4.0r2/hdf/jpeg/install.doc
HDF4.0r2/hdf/jpeg/jcapimin.c
HDF4.0r2/hdf/jpeg/jcapistd.c
HDF4.0r2/hdf/jpeg/jccoefct.c
HDF4.0r2/hdf/jpeg/jccolor.c
HDF4.0r2/hdf/jpeg/jcdctmgr.c
HDF4.0r2/hdf/jpeg/jchuff.c
HDF4.0r2/hdf/jpeg/jchuff.h
HDF4.0r2/hdf/jpeg/jcinit.c
HDF4.0r2/hdf/jpeg/jcmainct.c
HDF4.0r2/hdf/jpeg/jcmarker.c
HDF4.0r2/hdf/jpeg/jcmaster.c
HDF4.0r2/hdf/jpeg/jcomapi.c
HDF4.0r2/hdf/jpeg/jconfig.bcc
HDF4.0r2/hdf/jpeg/jconfig.cfg
HDF4.0r2/hdf/jpeg/jconfig.dj
HDF4.0r2/hdf/jpeg/jconfig.doc
HDF4.0r2/hdf/jpeg/jconfig.manx
HDF4.0r2/hdf/jpeg/jconfig.mc6
HDF4.0r2/hdf/jpeg/jconfig.sas
HDF4.0r2/hdf/jpeg/jconfig.st

HDF4.0r2/hdf/jpeg/jconfig.vms
HDF4.0r2/hdf/jpeg/jconfig.wat
HDF4.0r2/hdf/jpeg/jcparam.c
HDF4.0r2/hdf/jpeg/jcphuff.c
HDF4.0r2/hdf/jpeg/jcprepct.c
HDF4.0r2/hdf/jpeg/jcsample.c
HDF4.0r2/hdf/jpeg/jctrans.c
HDF4.0r2/hdf/jpeg/jdapimin.c
HDF4.0r2/hdf/jpeg/jdapistd.c
HDF4.0r2/hdf/jpeg/jdatadst.c
HDF4.0r2/hdf/jpeg/jdatasrc.c
HDF4.0r2/hdf/jpeg/jdcoefct.c
HDF4.0r2/hdf/jpeg/jdcolor.c
HDF4.0r2/hdf/jpeg/jdct.h
HDF4.0r2/hdf/jpeg/jddctmgr.c
HDF4.0r2/hdf/jpeg/jdhuff.c
HDF4.0r2/hdf/jpeg/jdhuff.h
HDF4.0r2/hdf/jpeg/jdinput.c
HDF4.0r2/hdf/jpeg/jdmainct.c
HDF4.0r2/hdf/jpeg/jdmarker.c
HDF4.0r2/hdf/jpeg/jdmaster.c
HDF4.0r2/hdf/jpeg/jdmerge.c
HDF4.0r2/hdf/jpeg/jdphuff.c
HDF4.0r2/hdf/jpeg/jdpostct.c
HDF4.0r2/hdf/jpeg/jdsample.c
HDF4.0r2/hdf/jpeg/jdtrans.c
HDF4.0r2/hdf/jpeg/jerror.c
HDF4.0r2/hdf/jpeg/jerror.h
HDF4.0r2/hdf/jpeg/jfdctflt.c

HDF4.0r2/hdf/jpeg/jfdctfst.c
HDF4.0r2/hdf/jpeg/jfdctint.c
HDF4.0r2/hdf/jpeg/jidctflt.c
HDF4.0r2/hdf/jpeg/jidctfst.c
HDF4.0r2/hdf/jpeg/jidctint.c
HDF4.0r2/hdf/jpeg/rdbmp.c
HDF4.0r2/hdf/jpeg/jidctred.c
HDF4.0r2/hdf/jpeg/jinclude.h
HDF4.0r2/hdf/jpeg/jmemansi.c
HDF4.0r2/hdf/jpeg/jmemdos.c
HDF4.0r2/hdf/jpeg/jmemdosa.asm
HDF4.0r2/hdf/jpeg/jmemmgr.c
HDF4.0r2/hdf/jpeg/jmemname.c
HDF4.0r2/hdf/jpeg/jmemnobs.c
HDF4.0r2/hdf/jpeg/jmemsys.h
HDF4.0r2/hdf/jpeg/jmorecfg.h
HDF4.0r2/hdf/jpeg/jpegint.h
HDF4.0r2/hdf/jpeg/jpeglib.68k-project.hqx
HDF4.0r2/hdf/jpeg/jpeglib.PPC-project.hqx
HDF4.0r2/hdf/jpeg/jpeglib.h
HDF4.0r2/hdf/jpeg/jpegtran.1
HDF4.0r2/hdf/jpeg/jpegtran.c
HDF4.0r2/hdf/jpeg/jquant1.c
HDF4.0r2/hdf/jpeg/jquant2.c
HDF4.0r2/hdf/jpeg/jutils.c
HDF4.0r2/hdf/jpeg/jversion.h
HDF4.0r2/hdf/jpeg/libjpeg.doc
HDF4.0r2/hdf/jpeg/makcjpeg.st
HDF4.0r2/hdf/jpeg/makdjpeg.st

HDF4.0r2/hdf/jpeg/makefile.ansi
HDF4.0r2/hdf/jpeg/makefile.bcc
HDF4.0r2/hdf/jpeg/makefile.cfg
HDF4.0r2/hdf/jpeg/makefile.dj
HDF4.0r2/hdf/jpeg/makefile.manx
HDF4.0r2/hdf/jpeg/makefile.mc6
HDF4.0r2/hdf/jpeg/makefile.mms
HDF4.0r2/hdf/jpeg/makefile.sas
HDF4.0r2/hdf/jpeg/makefile.unix
HDF4.0r2/hdf/jpeg/makefile.vms
HDF4.0r2/hdf/jpeg/makefile.wat
HDF4.0r2/hdf/jpeg/makljpeg.st
HDF4.0r2/hdf/jpeg/maktjpeg.st
HDF4.0r2/hdf/jpeg/makvms.opt
HDF4.0r2/hdf/jpeg/rdcolmap.c
HDF4.0r2/hdf/jpeg/rdgif.c
HDF4.0r2/hdf/jpeg/rdjpgcom.1
HDF4.0r2/hdf/jpeg/rdjpgcom.c
HDF4.0r2/hdf/jpeg/rdppm.c
HDF4.0r2/hdf/jpeg/rdrle.c
HDF4.0r2/hdf/jpeg/rdswitch.c
HDF4.0r2/hdf/jpeg/rdtarga.c
HDF4.0r2/hdf/jpeg/structure.doc
HDF4.0r2/hdf/jpeg/testing.gif
HDF4.0r2/hdf/jpeg/testing.jpg
HDF4.0r2/hdf/jpeg/testing.ppm
HDF4.0r2/hdf/jpeg/testingp.jpg
HDF4.0r2/hdf/jpeg/testorig.jpg
HDF4.0r2/hdf/jpeg/testprog.jpg

HDF4.0r2/hdf/jpeg/usage.doc
HDF4.0r2/hdf/jpeg/wizard.doc
HDF4.0r2/hdf/jpeg/wrbmp.c
HDF4.0r2/hdf/jpeg/wrgif.c
HDF4.0r2/hdf/jpeg/wrjpgcom.1
HDF4.0r2/hdf/jpeg/wrjpgcom.c
HDF4.0r2/hdf/jpeg/wrppm.c
HDF4.0r2/hdf/jpeg/wrrle.c
HDF4.0r2/hdf/jpeg/wrtarga.c
HDF4.0r2/hdf/MAKE.COM
HDF4.0r2/hdf/Makefile.in
HDF4.0r2/hdf/README
HDF4.0r2/hdf/build.inc
HDF4.0r2/hdf/pablo/
HDF4.0r2/hdf/pablo/Makefile.in
HDF4.0r2/hdf/pablo/Pablo.ps
HDF4.0r2/hdf/pablo/PabloHDF.c
HDF4.0r2/hdf/pablo/PabloHDF.inc
HDF4.0r2/hdf/pablo/PabloHDFf.c
HDF4.0r2/hdf/pablo/PabloHDFff.f
HDF4.0r2/hdf/pablo/ProcIDs.h
HDF4.0r2/hdf/pablo/ProcMasks.h
HDF4.0r2/hdf/pablo/README.Pablo
HDF4.0r2/hdf/pablo/depend
HDF4.0r2/hdf/src/
HDF4.0r2/hdf/src/.indent.pro
HDF4.0r2/hdf/src/MAKEFS.COM
HDF4.0r2/hdf/src/MAKENOF.COM
HDF4.0r2/hdf/src/Makefile.CM5

HDF4.0r2/hdf/src/Makefile.in
HDF4.0r2/hdf/src/atom.c
HDF4.0r2/hdf/src/atom.h
HDF4.0r2/hdf/src/bitvect.c
HDF4.0r2/hdf/src/bitvect.h
HDF4.0r2/hdf/src/cdeflate.c
HDF4.0r2/hdf/src/cdeflate.h
HDF4.0r2/hdf/src/cmextelt.cs
HDF4.0r2/hdf/src/cnbit.c
HDF4.0r2/hdf/src/cnbit.h
HDF4.0r2/hdf/src/cnone.c
HDF4.0r2/hdf/src/cnone.h
HDF4.0r2/hdf/src/crle.c
HDF4.0r2/hdf/src/crle.h
HDF4.0r2/hdf/src/cskphuff.c
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HDF4.0r2/mfhdf/xdr/xdrlib.PPC-project.hqx
HDF4.0r2/mfhdf/xdr/xdrstdio.c
HDF4.0r2/mfhdf/xdr/xdrtest.68k-project.hqx
HDF4.0r2/mfhdf/xdr/xdrtest.PPC-project.hqx
HDF4.0r2/mfhdf/xdr/xdrtest.c
HDF4.0r2/mfhdf/xdr/xdrtest.mak
HDF4.0r2/mfhdf/xdr/xdrtest.opt
HDF4.0r2/release_notes/
HDF4.0r2/release_notes/Examples_CM5/
HDF4.0r2/release_notes/Examples_CM5/Fexample.fcm
HDF4.0r2/release_notes/Examples_CM5/Makefile
HDF4.0r2/release_notes/Examples_CM5/example.cs
HDF4.0r2/release_notes/ABOUT_4.0.alpha
HDF4.0r2/release_notes/ABOUT_4.0b1
HDF4.0r2/release_notes/ABOUT_4.0b2
HDF4.0r2/release_notes/ABOUT_4.0r1
HDF4.0r2/release_notes/ABOUT_4.0r2
HDF4.0r2/release_notes/Fortran_APIs.txt
HDF4.0r2/release_notes/JPEG.txt
HDF4.0r2/release_notes/bug_fixed.txt
HDF4.0r2/release_notes/comp_SDS.txt
HDF4.0r2/release_notes/compression.txt
HDF4.0r2/release_notes/dimval.txt
HDF4.0r2/release_notes/external_path.txt
HDF4.0r2/release_notes/install_winNT.txt
HDF4.0r2/release_notes/mf_ris.txt
HDF4.0r2/release_notes/parallel_CM5.txt

4.4 Release A SCF Toolkit User’s Guide Table of Contents

The contents of Release A SCF Toolkit User’s Guide are listed as follows:

1. Introduction

1.1 Identification	1-1
1.2 Scope	1-1
1.3 Purpose and Objectives	1-1
1.4 Status and Schedule	1-2
1.5 Document Organization	1-10

2. Related Documentation

2.1 Parent Documents	2-1
2.2 Applicable Documents	2-1
2.3 Information Documents	2-2

3. Toolkit Design Goals

3.1 Foundations	3-1
3.2 Nomenclature	3-1
3.3 Consistency	3-1
3.4 Hierarchical Design	3-2
3.5 Units	3-2
3.6 Ranges and Limits of Validity; unit vectors	3-2
3.7 Aging and Maturation Effects	3-3

4. Toolkit Usage, Functionality and Future Direction

4.1 Introduction	4-1
4.2 SCF Development Environment	4-2
4.2.1 Introduction	4-2

4.2.2 File Management.....	4-2
4.2.3 Runtime Configuration	4-4
4.2.4 PGE Script Development.....	4-4
4.2.5 Scheduling and Execution of PGEs	4-5
4.2.6 Error/Status Message Creation and Use.....	4-5
4.2.7 Error/Status Log Monitoring.....	4-6
4.2.8 Parallel Processing Issues	4-6
4.2.9 Configuration Management	4-7
4.2.10 Distributed Computing Environment (DCE) Issues	4-7
4.3 Test and Simulation Data Access.....	4-7
4.4 Language Bindings and Advanced FORTRAN Considerations.....	4-8

5. Toolkit Installation and Maintenance

5.1 Installation Procedures.....	5-1
5.1.1 Release A Toolkit Release Notes.....	5-1
5.1.2 To Install the SDP (formerly PGS) Toolkit from a Disk-Based Tar File.....	5-3
5.1.3 Compiling User Code with the Toolkit.....	5-16
5.1.4 Installation of AA Tools	5-17
5.2 Instructions on Making Changes to Installation Procedures.....	5-19
5.3 Link Instructions	5-21
5.4 Test Drivers.....	5-21
5.5 User Feedback Mechanism.....	5-22

6. SDP Toolkit Specification

6.1 Introduction.....	6-1
6.2 SDP Toolkit Tools—Mandatory.....	6-2
6.2.1 File I/O Tools.....	6-2
6.2.2 Error/Status Reporting (SMF Tools).....	6-105
6.2.3 Process Control Tools	6-150
6.2.4 Shared Memory Management Tools.....	6-196
6.2.5 Bit Manipulation Tools	6-207
6.2.6 Spacecraft Ephemeris and Attitude Data Access Tools.....	6-207
6.2.7 Time and Date Conversion Tools	6-223

6.3 SDP Toolkit Tools—Optional	6-281
6.3.1 Ancillary Data Tools.....	6-281
6.3.2 Celestial Body Position Tools.....	6-315
6.3.3 Coordinate System Conversion Tools.....	6-338
6.3.4 Geo–Coordinate Transformation Tools	6-451
6.3.5 Math and Statistical Support Tools.....	6-459
6.3.6 Constants and Unit Conversions	6-460
6.3.7 Dynamic Memory Management Tools	6-466
6.3.8 Graphics Support Tools	6-475

Appendix A. Assumptions

Appendix B. Status Message File (SMF) Creation and Usage Guidelines

B.1 Note	B-1
B.2 Description	B-1

Appendix C. Process Control Files

C.1 Defining Process Control Files.....	C-1
C.1.1 PCF Components.....	C-1
C.1.2 Format Rules	C-2
C.1.3 Format Example	C-3
C.1.4 Master Template:.....	C-5
C.2 Validating Process Control Files.....	C-16
C.2.1 DESCRIPTION:.....	C-16
C.2.2 INPUT	C-17
C.2.3 OUTPUT	C-17
C.2.4 ERRORS:	C-18
C.2.5 WARNINGS:	C-19
C.2.6 EXAMPLES:.....	C-19
C.2.7 BENEFITS:	C-60

Appendix D. Ancillary Data Access Tools

D.1 Introduction.....	D-1
D.2 PGS_AA_dcw.....	D-2
D.2.1 Data Sets Accessed.....	D-2
D.2.2 Outline Functionality.....	D-4
D.2.3 Optimal Operation.....	D-5
D.2.4 Upgrades.....	D-5
D.3 PGS_AA_dem, PGS_AA_2DRead, PGS_AA_2Dgeo, PGS_AA_3DRead, PGS_AA_3Dgeo.....	D-5
D.3.1 Data Sets Accessed.....	D-5
D.3.2 Functionality and Operation.....	D-10
D.3.2.2 Parameters and the indexFile.....	D-11
D.3.2.4 Operational Environment.....	D-14
D.3.3 Optimal Operation.....	D-14
D.3.4 Setting up new/user data sets.....	D-15
D.3.5 Upgrades.....	D-16
D.4 PGS_AA_PeVA.....	D-16
D.4.1 Data Sets accessed.....	D-16
D.4.2 Outline Functionality.....	D-17
D.4.3 Optimal Operation.....	D-17
D.4.4 Upgrades.....	D-17

Appendix E. Example of Level 0 Access Tool Usage

E.1 Preparing Simulated CERES L0 Files.....	E-1
E.1.1 Sample Session.....	E-2
E.2 CERES Level 0 processing code using the SDP Toolkit.....	E-4
E.2.1 Notes:.....	E-4

Appendix F. Level 0 File Formats

F.1 Tropical Rainfall Measuring Mission (TRMM) File Formats.....	F-1
F.1.1 TRMM Files Schematic.....	F-1
F.1.2 Detached SFDU File.....	F-2

F.1.3 TRMM File Header	F-2
F.1.4 TRMM Packet Data.....	F-3
F.1.5 TRMM File Footer.....	F-4
F.2 EOS AM File Formats.....	F-4
F.2.1 EOS AM File Schematic.....	F-4
F.2.2 EOS AM File Header.....	F-5
F.2.3 EOS AM Packet Data	F-5
F.3 EOS PM File Formats.....	F-6
F.3.1 EOS PM File Schematic	F-6
F.3.2 EOS PM File Header	F-6
F.3.3 EOS PM Packet Data.....	F-7
F.4 ADEOS-II File Formats.....	F-8
F.4.1 ADEOS-II File Schematic	F-8
F.4.2 ADEOS-II File Header	F-8
F.4.3 ADEOS-II Packet Data.....	F-8

Appendix G. PGS_GCT Information Relating To Interface Specification

G.1 Projection Id's.....	G-1
G.1.1 NOTES.....	G-1
G.2 GCTP Error Messages.....	G-2
G.2.1 NOTES.....	G-6
G.3 UTM Zone Codes.....	G-7

Appendix H. PGS_CUC_Cons - Example Standard Constants File

Appendix I. PGS_CUC_Conv—Input File Provided With the UdUnits Software

Appendix J. Population of Granule Level Metadata Using the SDP metadata tools

J.1 Introduction	J-6
J.2 Development of the Core Metadata Model	J-6
J.3 ECS Granule Level Metadata.....	J-6
J.4 Satisfying Mandatory Requirement and Determining Specific Attributes.....	J-7
J.5 Metadata Toolkit Usage	J-7
J.6 Metadata Control File (MCF).....	J-10
J.6.1 Purpose of the MCF.....	J-10
J.6.2 Structure of the MCF.....	J-10
J.6.3 Internal Syntax.....	J-16
J.6.4 Constructing the MCF	J-17
J.6.5 Management of the MCF.....	J-22
J.6.6 Example of Output Header.....	J-24
J.6.7 Inclusion of Multiple Attribute Values.....	J-26
J.7 Toolkit Utilization of the MCF.....	J-29
J.7.1 Overview	J-29
J.7.2 Scenario	J-31
J.8 MCF Specification.....	J-33

Appendix K. POSIX Systems Calls Usage Policy

Appendix L. Ephemeris And Attitude File Formats

L.1 Spacecraft Ephemeris File Format	L-1
L.2 Spacecraft Attitude File Format	L-3
L.3 Quality Flags.....	L-5

Appendix M. Problem Identification List

Abbreviations and Acronyms

List of Figures

6-1. Earth-Centered Rotating Coordinates	6-343
6-2. Earth-Centered Inertial Coordinates	3-344
6-3 Relationship Between ECI Coordinates and Orbital Coordinates	3-345
D-1. DCW Database Directory	D-3
F-1. TRMM Files Schematic	F-1
F-2. EOS AM File Schematic	F-4
F-3. EOS PM File Schematic	F-6
F-4. ADEOS-II File Schematic	F-8
J-1. Processing Subsystem	J-9
J-2 Group Structure Parsing	J-24
L-1. Ephemeris File Schematic	L-1
L-2. Attitude File Schematic	L-4

List of Tables

1-1. Toolkit Routine Key	1-3
1-2. Toolkit Routine Listing	1-3
1-3. Tool Changes for Release A Toolkit Delivery	1-10
5-1. SDP Toolkit Development Configuration	5-14
5-2. Required Directory Environment Variables	5-15
5-3. Required Compiler and Library Environment Variables	5-15
5-4. Values of OSTYPE	5-19
5-5. Environment Variables	5-20
6-1. PGS_IO_L0_Open Returns	6-7
6-2. PGS_IO_L0_SetStart Returns	6-11
6-3. PGS_IO_L0_GetHeader Returns	6-14
6-4. PGS_IO_L0_GetPacket Returns	6-20
6-5. PGS_IO_L0_Close Returns	6-24
6-6. PGS_IO_L0_File_Sim Returns	6-28

6-7. File Access Type.....	6-36
6-8. PGS_IO_Gen_Open Returns	6-36
6-9. File Access Type.....	6-40
6-10. PGS_IO_Gen_OpenF Returns	6-40
6-11. PGS_IO_Gen_Close Returns.....	6-43
6-12. PGS_IO_Gen_CloseF.....	6-45
6-13. PGS_MET_Init Inputs.....	6-48
6-14. PGS_MET_Init Outputs	6-48
6-15. PGS_MET_Init Returns.....	6-49
6-16. PGS_MET_SetAttr Inputs.....	6-61
6-17. PGS_MET_SetAttr Returns.....	6-62
6-18. PGS_MET_GetSetAttr Inputs	6-71
6-19. PGS_MET_GetSetAttr Outputs.....	6-72
6-20. PGS_MET_GetSetAttr Returns.....	6-72
6-21. PGS_MET_GetPCAttr Inputs	6-77
6-22. PGS_MET_GetPCAttr Outputs.....	6-78
6-23. PGS_MET_GetPCAttr Returns	6-78
6-24. PGS_MET_GetConfigData Inputs	6-84
6-25. PGS_MET_GetConfigData Outputs	6-84
6-26. PGS_MET_GetConfigData Returns.....	6-85
6-27. PGS_MET_Write Inputs	6-89
6-28. PGS_MET_WriteReturns	6-90
6-29. File Access Type.....	6-96
6-30. PGS_IO_Gen_Temp_Open Returns.....	6-96
6-31. Proper Use of Persistence Values	6-97
6-32. Temporary File Name Definition.....	6-99
6-33. File Duration	6-100
6-34. File Access Type.....	6-101
6-35. PGS_IO_Gen_Temp_OpenF Returns.....	6-101

6-36. PGS_SMF_SetUNIXMsg Returns	6-111
6-37. PGS_SMF_SetStaticMsg Returns	6-114
6-38. PGS_SMF_SetDynamicMsg Returns.....	6-116
6-39. PGS_SMF_GetMsgByCode Returns;	6-119
6-40. PGS_SMF_GetActionByCode Returns.....	6-121
6-41. PGS_SMF_CreateMsgTag Returns.....	6-123
6-42. PGS_SMF_GetInstrName Returns.....	6-125
6-43. PGS_SMF_GenerateStatusReport Returns	6-127
6-44. Environment Variables	6-128
6-45. PGS_SMF_SendRuntimeData Returns	6-129
6-46. PGS_SMF_TestStatusLevel Returns.....	6-141
6-47. PGS_SMF_Begin Returns.....	6-144
6-48. PGS_SMF_End Returns	6-145
6-49. PGS_SMF_SetArithmeticTrap Returns.....	6-146
6-50 PGS_PC_GetReference Returns.....	6-170
6-51. PGS_PC_GetReferenceType Returns.....	6-173
6-52. PGS_PC_GenUniqueID Returns	6-177
6-53. PGS_PC_GetConfigData Returns.....	6-179
6-54. PGS_PC_GetNumberOfFiles Returns	6-182
6-55. PGS_PC_GetFileAttr Returns.....	6-186
6-56. PGS_PC_GetFileByAttr Returns.....	6-189
6-57. PGS_PC_GetReference Returns.....	6-193
6-58. PGS_MEM_ShmCreate Returns	6-197
6-59. PGS_MEM_ShmAttach Returns.....	6-199
6-60. PGS_MEM_ShmDetach Returns	6-201
6-61. PGS_MEM_ShmRead Inputs.....	6-203
6-62. PGS_MEM_ShmRead Outputs	6-203
6-63. PGS_MEM_ShmRead Returns	6-203
6-64. PGS_MEM_ShmWrite Inputs.....	6-205

6-65. PGS_MEM_ShmWrite Returns.....	6-205
6-66. PGS_EPH_EphemAttit Inputs	6-213
6-67. PGS_EPH_EphemAttit Outputs	6-213
6-68. PGS_EPH_EphemAttit Returns.....	6-213
6-69. PGS_EPH_GetEphMet Inputs	6-219
6-70. PGS_EPH_GetEphMet Outputs	6-219
6-71. PGS_EPH_GetEphMet Returns.....	6-219
6-72. Estimated Errors in UT1 Predictions (Milliseconds of Time and Equivalent Meters of Geolocation Error).....	6-229
6-73. PGS_TD_UTCtoTAI Inputs	6-231
6-74. PGS_TD_UTCtoTAI Outputs.....	6-231
6-75. PGS_TD_UTCtoTAI Returns.....	6-232
6-76. PGS_TD_TAItoUTC Inputs	6-234
6-77. PGS_TD_TAItoUTC Outputs.....	6-234
6-78. PGS_TD_TAItoUTC Returns.....	6-234
6-79 . PGS_TD_TAItoTAIjd.c Inputs	6-236
6-80. PGS_TD_TAItoTAIjd Outputs	6-236
6-81. PGS_TD_TAIjdtoTAI Inputs	6-238
6-82. PGS_TD_TAItoGAST Inputs.....	6-240
6-83. PGS_TD_TAItoGAST Outputs	6-240
6-84. PGS_TD_TAItoGAST Returns	6-240
6-85. PGS_TD_UTCtoSctime Returns	6-243
6-86. PGS_TD_Sctime_to_UTC Outputs	6-246
6-87. PGS_TD_Sctime_to_UTC Returns	6-246
6-88. PGS_TD_ASCIItime_AtoB Inputs.....	6-248
6-89. PGS_TD_ASCIItime_AtoB Outputs	6-248
6-90. PGS_TD_ASCIItime_AtoB Returns	6-248
6-91. PGS_TD_ASCIItime_BtoA Inputs.....	6-250
6-92. PGS_TD_ASCIItime_BtoA Outputs	6-250
6-93. PGS_TD_ASCIItime_BtoA Returns	6-250

6-94. PGS_TD_UTCtoGPS Inputs.....	6-252
6-95. PGS_TD_UTCtoGPS Outputs.....	6-252
6-96. PGS_TD_UTCtoGPS Returns	6-252
6-97. PGS_TD_GPSstoUTC Inputs.....	6-254
6-98. PGS_TD_GPSstoUTC Outputs.....	6-254
6-99. PGS_TD_GPSstoUTC Returns	6-254
6-100. PGS_TD_UTCtoTDTjed Inputs	6-256
6-101. PGS_TD_UTCtoTDTjed Outputs.....	6-256
6-102. PGS_TD_UTCtoTDTjed Returns.....	6-256
6-103. PGS_TD_UTCtoTDBjed Inputs.....	6-259
6-104. PGS_TD_UTCtoTDBjed Outputs	6-259
6-105. PGS_TD_UTCtoTDBjed Returns.....	6-259
6-106. PGS_TD_TimeInterval Inputs	6-262
6-107. PGS_TD_TimeInterval Outputs	6-262
6-108. PGS_TD_TimeInterval Returns.....	6-262
6-109. PGS_TD_UTCtoUTCjd Inputs.....	6-264
6-110. PGS_TD_UTCtoUTCjd Outputs	6-264
6-111. PGS_TD_UTCtoUTCjd Returns	6-264
6-112. PGS_TD_UTCjdtoUTC Inputs.....	6-266
6-113. PGS_TD_UTCjdtoUTC Outputs	6-266
6-114. PGS_TD_UTCjdtoUTC Returns	6-266
6-115. PGS_TD_UTCtoUT1 Inputs.....	6-268
6-116. PGS_TD_UTCtoUT1 Outputs.....	6-268
6-117. PGS_TD_UTCtoUT1jd Inputs	6-271
6-118. PGS_TD_UTCtoUT1jd Outputs.....	6-271
6-119. PGS_TD_UTCtoUT1jd Returns.....	6-271
6-120. Get Leap Second Inputs.....	6-273
6-121. Get Leap Second Outputs	6-273
6-122. Get Leap Seconds Returns	6-274

6-123. PGS_AA_dcw Inputs.....	6-282
6-124. PGS_AA_dcw Outputs	6-282
6-125. PGS_AA_dcw Returns	6-282
6-126. PGS_AA_dem Inputs	6-286
6-127. PGS_AA_dem Outputs.....	6-286
6-128. PGS_AA_dem Returns.....	6-286
6-129. PGS_AA_PeVA_string Inputs	6-289
6-130. PGS_AA_PeVA_string Outputs.....	6-289
6-131. PGS_AA_PeVA_string Returns.....	6-289
6-132. PGS_AA_PeVA_real Inputs	6-291
6-133. PGS_AA_PeVA_real Outputs.....	6-291
6-134. PGS_AA_PeVA_real Returns.....	6-291
6-135. PGS_AA_PeVA_integer Inputs	6-293
6-136. PGS_AA_PeVA_integer Outputs.....	6-293
6-137. PGS_AA_PeVA_integer Returns.....	6-293
6-138. PGS_AA_2Dgeo Inputs.....	6-296
6-139. PGS_AA_2Dgeo Outputs.....	6-296
6-140. PGS_AA_2Dgeo Returns	6-297
6-141. PGS_AA_3Dgeo Inputs.....	6-301
6-142. PGS_AA_3Dgeo Outputs.....	6-301
6-143. PGS_AA_3Dgeo Returns (1 of 2)	6-301
6-145. PGS_AA_2DRead Input.....	6-306
6-146. PGS_AA_2DRead Output.....	6-306
6-147. PGS_AA_2DRead Returns.....	6-307
6-148. PGS_AA_3DRead Inputs	6-311
6-149. PGS_AA_3DRead Outputs	6-311
6-150. PGS_AA_3DRead Returns.....	6-312
6-151. PGS_CBP_Earth_CB_Vector Inputs.....	6-318
6-152. PGS_CBP_Earth_CB_Vector Outputs.....	6-319

6-153. PGS_CBP_Earth_CB_Vector Returns	6-319
6-154. PGS_CBP_Sat_CB_Vector Inputs	6-322
6-155. PGS_CBP_Sat_CB_Vector Inputs	6-322
6-156. PGS_CBP_Sat_CB_Vector Returns.....	6-322
6-157. PGS_CBP_SolarTimeCoords Inputs	6-325
6-158. PGS_CBP_SolarTimeCoords Outputs	6-326
6-159. PGS_CBP_SolarTimeCoords Returns.....	6-326
6-160. PGS_CBP_body_inFOV Inputs	6-330
6-161. PGS_CBP_body_inFOV Outputs.....	6-330
6-162. PGS_CBP_body_inFOV Returns.....	6-331
6-163. Physical Radii for CB in FOV Tool	6-335
6-164. PGS_CSC_ECIttoECR Inputs	6-347
6-165. PGS_CSC_ECIttoECR Outputs	6-347
6-166. PGS_CSC_ECIttoECR Returns.....	6-347
6-167. PGS_CSC_ECRtoECI Inputs	6-351
6-168. PGS_CSC_ECRtoECI Outputs	6-351
6-169. PGS_CSC_ECRtoECI Returns.....	6-351
6-170. PGS_CSC_ECRtoGEO Inputs	6-354
6-171. PGS_CSC_ECRtoGEO Outputs.....	6-354
6-172. PGS_CSC_ECRtoGEO Returns.....	6-355
6-173. PGS_CSC_GEOtoECR Inputs	6-357
6-174. PGS_CSC_GEOtoECR Outputs.....	6-357
6-175. PGS_CSC_GEOtoECR Returns.....	6-358
6-176. PGS_CSC_ECIttoSC Inputs.....	6-361
6-177. PGS_CSC_ECIttoSC Outputs	6-361
6-178. PGS_CSC_ECIttoSC Returns.....	6-361
6-179. PGS_CSC_SCtoECI Inputs.....	6-365
6-180. PGS_CSC_SCtoECI Outputs	6-365
6-181. PGS_CSC_SCtoECI Returns.....	6-365

6-182. PGS_CSC_SCtoORB Inputs	6-369
6-183. PGS_CSC_SCtoORB Outputs.....	6-369
6-184. PGS_CSC_SCtoORB Returns.....	6-369
6-185. PGS_CSC_ORBtoSC Inputs	6-373
6-186. PGS_CSC_ORBtoSC Outputs.....	6-373
6-187. PGS_CSC_ORBtoSC Returns	6-373
6-188. PGS_CSC_ECIttoORB Inputs.....	6-377
6-189. PGS_CSC_ECIttoORB Outputs	6-377
6-190. PGS_CSC_ECIttoORB Returns	6-377
6-191. PGS_CSC_ORBtoECI Inputs.....	6-381
6-192. PGS_CSC_ORBtoECI Outputs	6-381
6-193. PGS_CSC_ORBtoECI Returns	6-381
6-194. PGS_CSC_SubSatPoint Inputs.....	6-385
6-195. PGS_CSC_SubSatPoint Outputs	6-385
6-196. PGS_CSC_SubSatPoint Returns	6-386
6-197. PGS_CSC_Earthpt_FixedFOV Inputs.....	6-391
6-198. PGS_CSC_Earthpt_FixedFOV Outputs.....	6-392
6-199. PGS_CSC_Earthpt_FixedFOV Returns	6-392
6-200. PGS_CSC_Earthpt_FOV Inputs.....	6-397
6-201. PGS_CSC_Earthpt_FOV Outputs	6-398
6-202. PGS_CSC_Earthpt_FOV Returns	6-398
6-203. PGS_CSC_SpaceRefract Inputs	6-404
6-204. PGS_CSC_SpaceRefract Outputs	6-404
6-205. PGS_CSC_SpaceRefract Returns.....	6-404
6-206. Altitude - Sea Level.....	6-406
6-207. PGS_CSC_GetFOV_Pixel Inputs	6-409
6-208. PGS_CSC_GetFOV_Pixel	6-409
6-209. PGS_CSC_GetFOV_Pixel Returns.....	6-410
6-210. Error due to Earth Motion in Time of Flight of Light.....	6-414

6-211. PGS_CSC_precs2000 Inputs.....	6-416
6-212. PGS_CSC_precs2000 Outputs	6-417
6-213. PGS_CSC_precs2000 Returns.....	6-417
6-214. PGS_CSC_nutate2000 Inputs.....	6-419
6-215. PGS_CSC_nutate2000 Outputs	6-420
6-216. PGS_CSC_nutate2000 Returns	6-420
6-217. PGS_CSC_J2000toTOD.c Inputs.....	6-423
6-218. PGS_CSC_J2000to.TOD.c Outputs	6-424
6-219. PGS_CSC_J2000toTOD Returns	6-424
6-220. PGS_CSC_TODtoJ2000.c Inputs.....	6-427
6-221. PGS_CSC_TODtoJ2000.c Outputs	6-427
6-222. PGS_CSC_TODtoJ2000c Returns.....	6-427
6-223. PGS_CSC_DayNight Inputs.....	6-430
6-224. PGS_CSC_DayNight Outputs	6-430
6-225. PGS_CSC_DayNight Returns	6-431
6-226. PGS_CSC_wahr2 Inputs	6-434
6-227. PGS_CSC_wahr2 Outputs.....	6-434
6-228. PGS_CSC_wahr2 Returns.....	6-434
6-229. PGS_CSC_GreenwichHour Inputs.....	6-436
6-230. PGS_CSC_GreenwichHour Outputs	6-437
6-231. PGS_CSC_GreenwichHour Returns	6-437
6-232. PGS_CSC_ZenithAzimuth Inputs.....	6-441
6-233. PGS_CSC_ZenithAzimuth Outputs	6-441
6-234. PGS_CSC_ZenithAzimuth Returns.....	6-441
6-235. PGS_GCT_Init Inputs	6-452
6-236. PGS_GCT_Init Returns.....	6-452
6-237. PGS_GCT_Proj Inputs	6-455
6-238. PGS_GCT_Proj Returns.....	6-455
6-239. PGS_CUC_Cons Input	6-461

6-240. PGS_CUC_Cons Output	6-461
6-241. PGS_CUC_Cons Returns	6-461
6-242. PGS_CUC_Conv Inputs	6-463
6-243. PGS_CUC_Conv Outputs	6-463
6-244. PGS_CUC_Conv Returns.....	6-464
6-245. PGS_MEM_Malloc Returns.....	6-466
6-246. PGS_MEM_Calloc Returns.....	6-468
6-247. PGS_MEM_Realloc Returns.....	6-470
D-1. Data Included in ToolkiK3/4/5	D-6
D-2. Current Index File	D-11
F-1. TRMM File Header	F-2
F-2. TRMM Packet Data.....	F-3
F-3. TRMM File Footer Table	F-4
F-4. EOS AM Packet Data	F-5
F-5. EOS PM File Header	F-6
F-6. EOS PM Packet Data.....	F-7
F-7. ADEOS-II File Header	F-8
F-8. ADEOS-II Packet Data.....	F-9
G-1. GCTP Error Messages.....	G-2
G-2. Projection Transformation Package Projection Parameters.....	G-3
G-3. Universal Transverse Mercator (UTM) Zone Codes	G-7
G-4. State Plane Zone Codes.....	G-8
K-1. POSIX Call Guidelines By Class.....	K-2
K-2. POSIX Calls: Process Control	K-2
K-3. POSIX Calls: Memory	K-2
K-4. POSIX Calls: File I/O	K-3
K-5. POSIX Calls: Stream I/O	K-3
K-6. POSIX Calls: Error/environment	K-4
K-7. POSIX Calls: Ownership	K-4

K-8. POSIX Calls: Miscellaneous.....	K-4
K-9. POSIX Calls: Terminal I/O.....	K-5
K-10. POSIX Calls: Status	K-5
K-11. POSIX Calls: FORTRAN77 Language Library	K-5
L-1. Ephemeris File Fixed Length Header.....	L-2
L-2. Ephemeris File Universal Reference Record	L-2
L-3. Ephemeris Data Record.....	L-3
L-4. Ephemeris Orbit Metadata Record.....	L-3
L-5. Attitude File Fixed Length Header.....	L-4
L-6. Attitude File Universal Reference Record	L-5
L-7. Attitude Data Record.....	L-5
L-8. Quality Flags - Platform Generic	L-6
L-9. Example of Attitude Quality Flags - TRMM Platform Specific.....	L-7

5. Non-Conformance Status

5.1 Known Problems with Release A Toolkit 5.1.1

This section contains the list of problems closed (section 5.2) and known problems (section 5.3) as of 11/20/96 in the Release A Toolkit 5.1.1 Version 1.00 delivery. These problems were found and recorded during unit and integration testing or discovered by users of the previous version of the Toolkit and captured in the formal problem tracking system, Distributed Defect Tracking System (DDTS). The DDTS system generated the attached list of “closed” NCRs. This list has been reviewed by HITC management and Release Toolkit is considered to be acceptable for delivery at this time. The list includes the NCR ID, Title, Description, and Status. DDTS Problem Severity Definitions, on a 1-5 scale, are defined as follows:

- 1 Catastrophic and unrecoverable!
Example: system crash or lost user data.
- 2 Severely broken and no workaround.
Example: can't use major product function.
- 3 A defect that needs to be fixed but there is a workaround.
Example: user data must be modified to work.
- 4 A defect that causes small impact. Easy to recover or workaround.
Example: error messages aren't very clear.
- 5 Trivial defect or enhancement request.
Example: bad layout or misuse of grammar in manual.

5.2 Release A Toolkit 5.1.1 Non-Conformance Reports (Closed Status)

The following Toolkit open problems, listed by severity in numerical order, were closed with the Release A Toolkit 5.1.1 delivery:

ID: ECSed03557

Tool: MET

Title: MET Tools had compilation errors during build

Severity: 1

Description: Compilation errors compiling the MET tools and they were never built.

Makefile for group: MET

Makefile for group: MET; Target: all

Makefile for group: MET; Target: _subgroups

```

Making `all' in ./support
cc -c -O -Xa -DsunFortran -DSUN -I.
-I/fire2/pgstest/TOOLKIT/include
-I/fire2/pgstest/TOOLKIT/include/CUC
-I/fire2/pgstest/TOOLKIT/hdf/sun5/HDF4.0r1p1/hdf/include
PGS_MET_LoadAggregate.c
"/fire2/pgstest/TOOLKIT/include/PGS_MET.h", line 44:
cannot find include file: <hdf.h>
"/fire2/pgstest/TOOLKIT/include/PGS_MET.h", line 45:
cannot find include file: <mfhdf.h>
cc: acomp failed for PGS_MET_LoadAggregate.c
*** Error code 2
make: Fatal error: Command failed for target `PGS_MET_LoadAggregate.o'
Current working directory /fire2/pgstest/TOOLKIT/src/MET/support
*** Error code 1
make: Fatal error: Command failed for target `_subgroups'
Current working directory /fire2/pgstest/TOOLKIT/src/MET
*** Error code 1
make: Fatal error: Command failed for target `all'

```

Resolution: You must include the hdf.h and the mfhdf.h files in your drivers for it to compile. These were automatically included before in the PGS_MET.h but now has been taken out.

ID: ECSed04337

Tool: PGS_MET

Title: TOOLKIT does not support attribute type "TIME" or "DATE "

Severity: 1

Description: The TOOLKIT does not support attribute type "TIME" and "DATE". Ingest can not process the MCF template generated by SDSRV because the TOOLKIT fails when it encounter the TIME or DATE attribute type. According to DID311 TIME and DATE are valid attribute types

Resolution: DATE and TIME datatypes are now recognized by the toolkit as of basic type STRING.

ID: ECSed02092

Tool: TRMM time conversion

Title: Error in time conversion

Severity: 2

Description: While using the SDP Toolkit to process TRMM level 0 data, it has been noticed the TRMM times in L0 packets are not being properly interpreted. Specifically, although the time of the first packet in the file is indicated (by the file header) to be a certain time, the actual time of the first packet (as indicated by the packet secondary header) is being given by the toolkit as 3 days later.

Resolution: This bug was found in two low level tools:

PGS_TD_TRMMtoTAI() and PGS_TD_UTCtoTRMM().

These functions have a bug in them that can cause wildly inaccurate times (times are guaranteed to be accurate to +/- ~200 years though) (that's a joke, ignore it). Anyway this has to do with a variable representing seconds of a given day being assigned to jdUTC[1] which is a variable representing a decimal fraction of a day. The result is that jdUTC[1] which should have values = 0.0 and < 1.0 may have values ranging from 0 to 86399. Again, the value (representing seconds) will be interpreted as DAYS. This is bad, very bad. This will occur any time the UTCF value is NOT an integral multiple of 86400. If the UTCF value is 0 (as it was in testing) or any other integral multiple of 86400, the problem will not occur. But there is no special reason that it will be, so likely the problem will eventually occur in somebody's code.

The seconds of the day values is now being converted to fraction of a day before being assigned to jdUTC[1]. This fixed the problem.

The fix is in the two source code files:

PGS_TD_TAItotrmm.c and PGS_TD_UTCtoTRMM.c

Tools affected by this bug include:

IO_L0 tools and PGS_TD_Sctime_to_UTC() and PGS_TD_UTC_to_Sctime().

ID: ECSed04247

Tool: IO L0

Title: EDOS format change

Severity: 2

Description: While reviewing the EDOS ICD it was discovered that the PDS/EDS construction record format had been altered. Item 24-9 has a set of subfields. This is incompatible with the Toolkit L0 file reading functionality.

Resolution: Added the ability to properly parse the EDOS PDS/EDS construction record in the case of the existence of subfield for item 24-9.

ID: ECSed00949

Tool: PGS_PC_Shell

Title: Some FORTRAN drivers won't run when using PGS_PC_Shell.

Severity: 3

Description: When using the PGS_PC_Shell to execute a script that would run the C and FORTRAN drivers for different tools groups (CUC,EPH,CSC,etc.), some of the FORTRAN drivers wouldn't execute to completion.

These same drivers work using the same shell script outside of PGS_PC_Shell.

The driver will work fine using PGS_PC_Shell if the shared memory flags are turned off.

Resolution: The problem was in the structure store in shared memory.

The toolkit itself allocates shared memory for internal use. This shared memory is divided into three basic sections: a header section with bookkeeping information, a SMF cache for SMF message caching, and the PCF section for storing the contents of the Process Control File.

The first section of the shared memory (the bookkeeping section) contains information about the location of the other sections of the shared memory region. Included in this information were the memory locations, in the form of absolute addresses, of the SMF and PCF sections of the shared memory area.

The way this was being done was that shared memory was initially being created by the application PGS_PC_InitCom. This would create the memory section and fill out the header. The addresses of the SMF and PCF sections of the shared memory region were being stored in the shared memory header area at that time as absolute addresses calculated as the current address of the initial region of shared memory plus the offset to the respective areas.

The problem was that when later applications accessed shared memory, the location of the shared memory region as reported to that later application was different than the location of the shared memory region obtained in PGS_PC_InitCom. But the address of the SMF and PCF sections were stored in the shared memory header section as absolute addresses valid only at the time they were calculated within PGS_PC_InitCom. When later programs would try to access these areas they would either core dump or cause an error that was in at least one case being ignored by an SMF function that would eventually lead to a core dump.

The resolution turned out to be quite simple. The location of the SMF and PCF sections of shared memory are now kept as offsets RELATIVE to the current

address of the initial segment of shared memory. The when the address of one of these regions is required it is calculated at runtime as the CURRENT address of the initial region of shared memory PLUS the offset to the appropriate region. One of the difficulties in detecting this problem was that the location of the initial shared memory segment is very frequently at the same memory address within separate processes in a PGE. The effect of this was that the tools were working as expected most of the time.

All documentation to the effect that FORTRAN programs should not be used must be corrected. This is not a FORTRAN problem it was a toolkit shared memory problem.

ID: ECSed01930

Tool: PGS_TOOLKIT

Title: Status code "15" when shared memory enabled"

Severity: 3

Description: When shared memory is enabled, a status code of "15" is returned from PGS_PC_InitCom and the PGE is not run. When shared memory is disabled, PGE is run and a return code of "0" is returned

Resolution: Upon recreation of the problem it was determined that the PCF being used in this particular test has 3 errors and 2 warnings but the error code "15") should not have been returned from PGS_PC_InitCom. The function PGS_SMF_GetGlobalVar() had been added to PGS_PC_InitCom and was returning PGS_E_ENV (3855) and the shell was interpreting that as a 15.

A check was then added to determine if the return from PGS_SMF_GetGlobalVar() is equal to PGS_E_ENV. If it is a returnStatus of PGS_SM_SMF_LOGFILE is then returned from PGS_PC_InitCom.

ID: ECSed02192

Tool: many TD and CSC tools

Title: Many tools have an obsolete message on INTERIM UT1.

Severity: 3

Description: Many tools list the return PGSCSC_W_INTERIM_UT1 which is also in certain include files - see attached. Some functions try to trap this return, but it no longer exists, because there is no "Interim" status in the file "\$PGSDAT/CSC/utcpole.dat"

Resolution: I systematically deleted tests for the nonexistent return value in higher level tools. The code was allowed to process as normal .

ID: ECSed02194

Tool: PGS_CSC_ZenithAzimuth

Title: PGS_CSC_ZenithAzimuth.c lacks checks for out of range latitude.

Severity: 3

Description: The function fails to detect an out of range latitude. which means that certain trig functions will be exercised outside of a meaningful range if users supply an out of range value.

This could easily happen if users mistakenly enter degrees instead of radians. Wrong answers will result

Resolution: added several lines of code checking latitude

ID: ECSed02648

Tool: INSTALL script

Title: A 64bit check is needed for the INSTALL-TOOLKIT script

Severity: 3

Description: A check is needed in the INSTALL-TOOLKIT script that will check whether a machine is actually a 64 bit machine when the -sgi64 option is used. On edsel the -sgi64 option was entered on the a 32 bit machine. The installation proceeded without any warning and build a 32 bit version of the toolkit in the 64 bit place. There should be some type of prompt to let the user know if they try to build the 64 bit version of the toolkit on a 32 bit machine.

Resolution: Added check to print error message and exit if -sgi32 or -sgi64 flag is specifed on a 32-bit SGI machine.

ID: ECSed02878

Tool: PC SMF

Title: Unable to use shared memory when running sending email

Severity: 3

Description: The EventLogger_Driver_c.c driver is not working when it is called using the runTests because the runTests is calling the driver using shared memory. In the SMF.log PGS_PC_Shell.sh is returning a return value of 247 I am able to run the EventLogger_Driver_c.c manually using Event_Logger_Driver_c < EventLogger_Driver.in because shared memory is not used when running the driver this way.

Note: even though the event logger was replaced by the email facility, the event logger driver is still valid. Also all event logger functions were removed from the driver and the name of the driver will be changed when testing is finished.

Resolution: The shell script PGS_PC_Shell.sh was being invoked with the SMF cache size argument (4th argument) set to 5000. This is a request to set aside a shared memory region large enough to hold 5000 SMF messages and the related status

codes and mnemonics. This is most likely an unrealistically large number of records to cache. In any case the system call to get create and attach the shared memory is what is failing and the command line utility is properly returning PGS_SH_MEM_INIT (i.e. 247), indicating that the user requested shared memory could not be allocated.

When run under the debugger and checking the value of errno just following the call to shmget() (the offending system call), errno is found to be set to 22 which corresponds to EINVAL. According to the man page for shmget:

EINVAL size is less than the system-imposed minimum or greater than the system-imposed maximum.

EINVAL A shared memory identifier exists for key but the size of the segment associated with it is less than size and size is not equal to zero.

These seem to be the possibilities. The size shouldn't be larger than the system-imposed maximum (and certainly not less than the minimum), so perhaps the latter case (above) pertains. This may happen if some sort of shared memory usage was previously made on the system and not properly freed up.

The problem may also be occurring due to system resource limitations? The same command line may be run another machine running exactly the same operating system and succeed.

At any rate this does not seem to be a toolkit problem.

ID: ECSed02954

Tool: update_leapsec.sh

Title: script now requires a ".netrc" with "maia.usno.navy.mil";not iers

Severity: 3

Description: I had to change the software because the IERS moved its server. Also we were parsing a hand-edited file from them. US Naval Observatory lags them by a day or two, because it is an echo of them, but their system is more stable and the announcements are ~6 months ahead anyway.

Therefore all the software to update leap seconds was rewritten and tested. But it requires a ".netrc" with the following line:

```
machine maia.usno.navy.mil login anonymous password 'userid'
```

where 'userid' should be the user (operator or "root" might work)

THIS IS A CHANGE FROM a "mesiom" machine in france

Resolution: Informed appropriate Rel A PDPS personnel - they will be sure that the correct .netrc file is present

ID: ECSed02994

Tool: SMF Logging

Title: Unexpected PGSSMF_E_UNDEFINED_CODE entries in SMF log files "

Severity: 3

Description: The LIS instrument team provided source code for one of their programs. When properly configured the SMF log file LogStatus contains entries with the status message PGSSMF_E_UNDEFINED_CODE as a result of the LIS code attempting to use PGS_SMF_SetStaticMsg() with what appears to be a perfectly valid (LIS defined) status code. The SMF message files have been properly compiled with smfcompile and reside in the correct directory.

Resolution: This problem only occurs when shared memory is NOT used. The problem was in the low level function PGS_SMF_GetCodeFile(). This function keeps an array of five pointers (type FILE*) pointing to the open files of the five most recently accessed SMF message files. This was a misbegotten attempt to increase speed in the non-shared memory mode of the toolkit.

The aforementioned array was actually an array of structures which correlated the SMF seed number of an SMF message file with the FILE* pointer value. This was an array of five rotating values. The idea was to keep an array of pointers to the five most recently opened SMF message files for quick access. When a sixth file was accessed, the least recently accessed file was closed, array elements 2-5 were shifted to array elements 1-4 and the new file pointer was inserted in array element 5. Two flaws were found with the implementation.

- 1) The copy mechanism used to move the FILE* pointers was memmove and the number of bytes specified to be moved was 4*sizeof(FILE). This should have been 4*sizeof(FILE*). This was a source of a possible segmentation violation.
- 2) The file pointers were being shifted as per the discussion above BUT the associated seed numbers were NEVER being shifted. This led to the misassociation of an open file pointer to a given seed number. The affect of this was that the toolkit would attempt to locate a status code with one seed number within a file containing status codes generated from another seed number. This search would always fail and the SMF tools would record this fact in the LogStatus file with the message PGSSMF_E_UNDEFINED_CODE.

In TK5.1 a message caching scheme was introduced for the non-shared memory mode of the toolkit that mimicked the behavior of the toolkit in shared memory mode. This feature eliminated the need to keep open file pointers in memory to save speed (which actually wasn't much of a savings anyway). In effect the function PGS_SMF_GetCodeFile() was obsolete and has since been removed. The new (introduced in the IR1 release of the toolkit) function PGS_SMF_CacheMsgDym() accomplishes the speed up that the obsolete function was intended to provide.

ID: ECSed03138

Tool: PGS_MET

Title: various updates

Severity: 3

Description: Few updates were required for the Metadata tools which are listed below:

1. Non Mandatory metadata should not be written to product file if not set.
2. A separate ASCII file of inventory metadata should be written to the current directory with the same name as the product file but with a .met extension
3. User should not be worried about the maximum size of hdf attribute. If the attribute size is larger than required, it should be handled by the tools
4. Lower level ODL routines try to free memory which is already freed, potentially a serious error.
5. User should be able to dump the MCF in memory to a file of his choice and not the hardcoded "asciidump" file in PCF

Resolution:

1. Non Mandatory metadata is now not written to product file if not set.
2. A separate ASCII file is written to current directory if the metadata group is INVENTORYMETADATA
3. If the group size is greater than what is allowed by HDF, data is stored in more than one attributes. In such cases, hdfattributes names would be myMetaData.1, myMetaData.2 etc. User only knows that he/she has written myMetadata. Data should be retrieved using getPCAttribute
4. ODL freeing of unallocated memory is now resolved.
5. User can now specify own fileid through the interface by using the hdfFileId Parameter. If its set to null, the tools write the file to a default file asciidump as before, otherwise it tries to write to the fileid given in the dfFileId Parameter.

ID: ECSed03225

Tool: GCT tools

Title: various updates "

Severity: 3

Description: SOM projection routines seemed to have been specifically designed for LANDSAT satellites. It is so because a constant LANDSAT_RATIO is hard coded within the routines, although for SOM option A (which is a general routine) requires the user to supply it. This ratio has to be taken out as hard coded so that SOM option A can be used with other satellites. Option B is still specific to

LANDSAT satellites and there are no changes. For the testers, they need to specify a value 0.5201613 as the value of parameter[9] to keep things as before.

Resolution: The hardcoded definition of LANDSAT_RATIO is taken out. Users of option A must specify this value in the projection parameter list as element [9]. SOM option B remains unaffected which is specific for landsat satellites

ID: ECSed03306

Tool: PGS_MET_Write

Title: Bug in error msg logging "

Severity: 3

Description: This problem came to our attention via Cheryl Craig of NCAR. The function PGS_MET_Write() was called. The status returned from the function was 110148 (which corresponds to However when the SMF function PGS_SMF_GetMsg() is called to retrieve the relevant message text, the returned code, mnemonic and message are:

0, PGS_S_SUCCESS, SUCCESSFUL operation (respectively).

The EXPECTED code, mnemonic and message were:

110148, PGSMET_E_MAND_NOT_SET, Some of the Mandatory metadata were not set

Resolution: The source is corrected so that error is logged just before it is send to the user. User can the use PGS_SMF_getMsg to look at the associated message.

ID: ECSed03654

Tool: INSTALL script

Title: 64 bit object files are generated during 32 bit TOOLKIT builds

Severity: 3

Description: When building the 32 bit toolkit on the power challenge receive the following message:

ar: Warning:This archive ONLY holds 32 bit objects.

CUCprtlab.o is a 64 bit object file so symbol table info would not be generated for it. Received this for toolgroups CUC GCT EPH IO MEM PC SMF and TD.

Resolution: This turned out to be due to the fact that the version of the 'make' utility on this machine was corrupt. As a result, the wrong version of the compiler was being invoked in various cases, including the one where 64-bit objects were getting built into the 32-bit library.

The problem is that the values of \$CC (and other variables) were not getting passed correctly to sub-targets. When this happened, make would use the

defaults, resulting in things like \$CC defaulting to "cc" instead of "cc -32" and F77 defaulting to "f77" instead of "f90". I have so far witnessed this problem affect the following groups:

AA (freeware)

CUC (freeware)

IO/GEN (tries to build f90 with the f77 compiler!)

Supporting evidence:

- 1) These problems did not occur on the local SGI Challenge (spre1sgi.HITC.COM) or any other platform we have ever supported.
- 2) Using 'what' to show the versions of /bin/make on spre1sgi and sprg1sgi gave the following results:

sprg1sgi:

```
$Header: IRIX 6.0.1:1122702320 built 01/31/96 at
borg:/willy/patches/1125/root $
```

spre1sgi:

```
$Header: IRIX 6.2:1232792120 built 03/09/96 at borg:/vince/6.2-
mar09/root $
```

Note that the version of spre1sgi (where things work properly) is in line with the current OS version (6.2), whereas the version on sprg1sgi is an earlier one.

- 3) When the make utility on sprg1sgi was updated, the problem disappeared.

ID: ECSed03656

Tool: IO

Title: IO tools is having core dumps when drivers are run

Severity: 3

Description: IO tools are core dumping when input files 2, 4, and 6 are ran. These were cleaned up and changed in the last release of TOOLKIT RELA_TOOLKIT_071096.tar but no core dumps were happening after the changes on the previous version of TOOLKIT.

Resolution: The toolkit function PGS_IO_Gen_Close() was core dumping when a NULL FILE* pointer was passed to it. The core dump was actually occurring in the standard C function clearerr().

A test of the input FILE* pointer has been added so that clearerr() is not called if the input FILE* pointer is NULL. This resolves the core dump problem experience by the test drivers.

ID: ECSed04153

Tool: PGS_MET

Title: Some enhancements to the MET tools "

Severity: 3

Description: Some enhancements were required for the MET tools which are as follows:

- 1 User should be able to open and process multiple MCFs. All tools were affected
- 2 temporary files while using GET_PC_Attr() should be taken out and the process be made more efficient
- 3 Date and time metadata definition in conflict with the DID311 in the MCF template should be taken care of by the MET tools. Routine affected is PGS_MET_CheckAttr()
- 4 errno set by the user is incorrectly detected by the ODL routines, all tools were affected
5. Conflict between HDF and and ODL .h files should be resolved. The culprit is the definition ATTRIBUTE which is defined in both. This is not the case with the latest HDF release (40r2)

Resolution: All the problems stated in the 'problem' have been resolved

ID: ECSed04246

Tool: SMF logging

Title: Log file banner incorrectly indicates logging disabled

Severity: 3

Description: After running a PGE, the PGE banner in the LogStatus, LogUser, LogReport files incorrectly indicates that logging has been disabled for the PGE.

Logging has NOT been disabled in the PCF and logging appears to work. Here is an example of an offending banner:

BEGIN_PGE: Wed Oct 23 15:10:23 1996

MSG_TAG: 11

FILE: /home/khalsa/src/aster/LogStatus

LOGGING: status message logging disabled

TRACE_LEVEL: full tracing enabled

PID_LOGGING: disabled

Here is what is expected:

BEGIN_PGE: Wed Oct 23 15:10:23 1996

MSG_TAG: 11

FILE: /home/khalsa/src/aster/LogStatus

LOGGING: status message logging enabled

TRACE_LEVEL: full tracing enabled

PID_LOGGING: disabled

The error in the first case (above) is in the field "LOGGING:" where it is indicated that that message logging has been disabled.

Resolution: The function PGS_SMF_LoggingControl() was missing some functionality. That function was intended to be queried for the overall logging status (i.e. whether or not logging status was enabled or disabled in general) of the SMF. The input command to do this was not being recognized by the function. The default behavior was causing it to indicate under certain circumstances that logging had been disabled. These "certain circumstances" were namely if the PCF used for the PGE had the value "0" listed as a disabled seed value.

The function has been fixed so that this no longer occurs. The function is in the file PGS_SMF_LoggingControl.c.

ID: ECSed04257

Tool: TD tools

Title: Leapsecond period too short

Severity: 3

Description: It has been noticed that the function PGS_TD_Leapsec(), which determines the value of TAI-UTC for a given input UTC, only allows the last leap second value in the file to be valid for one year from its occurrence.

This is not realistic as past leap second (i.e. TAI-UTC) values have been valid for up to 2.5 years. This means that the software will issue an error if a valid TAI-UTC value covers more than a 1 year period. In the past versions of the TK this was not a problem because of the use of PREDICTED leap second values. This meant that the last value was a predicted one and not really valid anyway. For the TK5.1(+?) version of the TK, the PREDICTED leap seconds have been removed from the file and now the 1 year limitation becomes a problem.

The last leap second value should be considered valid for at LEAST two years from its initial occurrence.

Resolution: The maximum period that a leap second (i.e. TAI-UTC) value is assumed to be valid for has been increased to 900 days (roughly 30 months or 2.5 years). This was done in the file PGS_TD_LeapSec.c.

ID: ECSed04334

Tool: SMF

Title: excessive CPU usage by SetStaticMsg

Severity: 3

Description: This one came from JPL:

From: Mike M. Smyth <smyth@gaea.jpl.nasa.gov>

Date: Mon Nov 4, 10:18am

We have recently done profiling on a program that uses the SDP toolkit. We found that a very significant fraction of the time (1/3) is spent in one function & its descendents: PGS_SMF_SetStaticMsg. On looking in the code, it appears that this function is called by every other toolkit function, even when that function successfully returns. The PGS_SMF_SetStaticMsg function apparently copies the function name to buffer, but nothing ever seems to be done with this buffer unless an error occurs.

The program we wrote is a simulation program, that will have significant run times (~60 hours). It seems to be really bad to spend 20 hours in an apparently pointless function.

Resolution: The function PGS_SMF_SetStaticMsg() was found to be needlessly doing string manipulation on the input function name in the case where the code was PGS_S_SUCCESS.

This code has been fixed so that this is no longer done. A speed up of 20%-50% has been achieved in various test programs.

ID: ECSed04499

Tool: PGS_MET

Title: Getting core dump for C driver on SUN4 f77"

Severity: 3

Description: Get a core dump for the MET c driver near the end. This happens when the getpc_string is run on the SUN4 4.1.4 with f77 version.

This problem also happens on the sun4 f90 version and with the hp at the same spot. Also happening on the power challenge with 64 bit f77 and f90

Resolution: The problem was found to be in the HDF routine SDstart which fails when the full filename length exceeds 70-80 characters. It fails cleanly on other machines and core dumps on the sun4. This matter should be taken up with NCSA.

ID: ECSed04506

Tool: PGS_EPH_GetEphMet

Title: Core dumping when input value for numValues is -1"

Severity: 3

Description: When running the driver PGS_EPH_GetEphMet_Driver_c, if the input for numValues (the number of offset values) is "-1" (for a test of bad array sizes), the tool gives a segmentation fault core dump for the following platforms:

spre1sgi (IRIX6.2) - all modes

cle1sun (SUN5)

cle4sgi (IRIX5.3)

venus (SUN4) - also gives core dumps for other negative values

The core dumps do not occur on york (HP), cle3ibm, or cle5dec.

Resolution: The problem here turned out to be in the FORTRAN binding provided by cfortran.h. When passing strings arrays between FORTRAN and C, cfortran.h makes copies of the FORTRAN strings to arrays of larger size to accomodate the C null terminator. The mechanism used by cfortran.h requires it to know the size of the array desired by the user. In this case that is represented by the input variable "numvalues". cfortran.h uses this value to malloc space for the new string arrays. When this value was -1, malloc was being called with a -1, yielding unpredictable behavior (e.g. core dumping on some systems and not on others).

Because the problem was occurring in the FORTRAN binding, the only solution was to create an intermediary FORTRAN function called pgs_eph_getephmet() which just checks the value of the input variable "numvalues" BEFORE handing things off to the FORTRAN binding. The FORTRAN code rejects these bad values (i.e. < 0) and returns directly, having set an appropriate error from the FORTRAN code.

This new function is in \$PGSSRC/EPH/PGS_EPH_GetEphMetF.f. The files makefile and PGS_EPH_bindFORTRAN.c in the same directory also had to be altered.

ID: ECSed02040

Tool: CSC Tools

Title: Refraction value difference in PGS_CSC_ZenithAzimuth (F90 in New32 mode)

Severity: 4

Description: When running PGS_CSC_ZenithAzimuth_Driver_f in F90 and in new32 bit mode, a refraction value of "*****" instead of "0.00000000" resulted for the following test cases:

object below horizon

out of bounds vector latitude

out of bounds longitude

Resolution: All the test cases listed in the "Problem" description had inputs of latitudes of large magnitude (i.e. $> \pi/2$). The tool PGS_CSC_ZenithAzimuth() did not include a check on the input latitude value. This check has now been added and the tool should behave reasonably.

ID: ECSed02266

Tool: MET

Title: Cant read metadata written using the version 5.0 toolkit

Severity : 4

Description: metadata written using toolkit version 5.0 cannot be read using tk5.1

Resolution: There has been a slight format change in tk5.1. The extraction routine expected a field for NUM_VAL in the output metadata and reports an error if its not there as is the case with format for 5.0. This is resolved by removing the error return. Instead the program automatically assumes that it must be reading 5.0 version if that files is not there. Two files were affected: PGS_MET_GetSetAttr.c and PGS_MET_GetSetAttrF.c

ID: ECSed03007

Tool: Temp IO

Title: Reopening an intermediate file causes an error to be returned

Severity: 4

Description: In a single application: called PGS_IO_Gen_Temp_Open() with a valid file logical with endurance set to PGSd_IO_Gen_Endurance. Manipulated the file. Closed it. Opened the file again in read-only access mode and got the return status:

PGSIO_W_GEN_DURATION_NOMOD

Intermediate file duration may not be modified in this access mode. The expected return value was PGS_S_SUCCESS.

Further investigation showed that reopening the file in ANY valid access mode yielded the above return status. It was not possible to reopen a temporary file within an application and get a return value of PGS_S_SUCCESS.

Resolution: The file PGS_Gen_Temp_Reference had a bug in it. This file includes a test on the various attributes of a non-permanent file that has just been opened. This test examines the attributes of the opened file to see if it already exists, whether it is a temporary or intermediate file and whether it has been successfully opened.

The test was in part intended to check that an intermediate file was not being accessed by the user as a temporary file. The idea was to return a warning in this case that the file is an intermediate file and its "duration" (i.e. whether it is temporary or intermediate) cannot be changed by the user.

The test was accidentally setting the warning if a previously existing intermediate file was accessed as an intermediate file (as it should be)!

The test has been fixed so that a warning is now set if a previously existing intermediate file is accessed as a TEMPORARY file (which it should not be).

ID: ECSed03713

Tool: MET_Write

Title: strings containing words more than 60 chr cause core dump

Severity: 4

Description: Metadata values of type string may contain values which are more than 60 characters long without a blank space. This causes MET_Write to core dump. eg.

Value = ("xxxxxxxxxx_xxxxxxxxxx_xxxxxxxxxx_xxxxxxxxxx_xxxxxxxxxx_xxxxxxxxxx")

Resolution: Problem is with the ODL code. WriteLabel works according to a format which states that maximum number number for an output line is MAX_RIGHT_MARGIN (132) and maximum characters in a label MAXLABLINE (70). Therefore in the case of the user (Fred PAtt) who discovered this problem, 60 + 10 from the indentation exceeded the limit. ODL should be able to detect this. I've experimented with changing values of these definitions to a higher value and it works. I recommend changes to the ODL code to solve this problem.

Values of the ODL definitions MAX_RIGHT_MARGIN and MAXLABLINE, has been changed so that long words are processed correctly.

ID: ECSed03929

Tool: INSTALL script

Title: NAG flag needs to be modified

Severity: 4

Description: Right now the NAG flag will stop the installation of the f90 32bit version of the TOOLKIT if the SGI native compiler instead of the NAG is detected. In future versions of the SGI there will be no NAG compiler and the native compiler will

have all of the capabilities of the NAG compiler. As it stands now this change does not have to happen until the Release B version of the TOOLKIT

Resolution: Modified the script INSTALL-Toolkit to allow the old-style 32-bit f90 build to use the SGI f90 compiler under IRIX 6.2 and higher.

ID: ECSed04042

Tool: TRMM time conversion

Title: Error in time conversion

Severity: 4

Description: When looking for a logical ID in the Process Control File (PCF) the PC tools check each appropriate subject field (delimited by the '?' token) for an occurrence of the requested logical ID.

Currently the PC tools log three error messages for each subject are that it checks that does not have the logical ID. This means that many log messages are recorded when attempting to access a file even though nothing is wrong with the file or the access attempt.

This behavior was ONLY occurs when shared memory is used. This behavior intentional in earlier versions of the Toolkit, for debugging/testing purposes but has since been eliminated in the non-shared memory version of the tools. The shared memory version should exhibit the same behavior as the non-shared memory version currently does (i.e., no messages logged unless an actual problem is encountered in accessing the logical ID in the PCF).

Resolution: Remove calls to PGS_SMF_SetStaticMsg() in areas when a WARNING level message is going to be returned from certain functions. The message output to the log file stating that no reference was found in PGS_PC_GetReference() was altered to let the user know the exact Product ID and Version number used in the call.

The following source code files were affected:

PGS_PC_GetDataFromShm.c

PGS_PC_GetReference.c

PGS_PC_SearchShm.c

PGS_PC_GetFileFromShm.c

The following message files were affected:

PGS_PC_9.t

PGS_9

ID: ECSed04299

Tool: PCF

Title: '/' REQUIRED in default paths

Severity: 4

Description: For each subject field that relates to files in the PCF, a default path must be specified. If this path has NO '/' character anywhere in it, the IO tools will fail.

Resolution: Fixed code in file PGS_PC_GetFileName.c (function PGS_PC_GetPCSDDataGetFileName()). Now appending '/' character to end of directory names IF the directory names are non-null and contain no '/' already.

ID: ECSed03332

Tool: PGS_MET

Title: creation of multiple temporary files "

Severity: 5

Description: PGS_MET_GetPCAttr creates a new temporary file on each call. The file is only marked for deletion at a later date. This is a problem in the case when this routine is used extensively with huge number of temporary files filling the disk space.

Resolution: The problem is corrected so that the temporary files are created only once

ID: ECSed03896

Tool: pgs-dev-env.csh

Title: Incorrect date for updates in history in pgs-dev-env.csh

Severity: 5

Description: The date is incorrect in the pgs-dev-env.csh for the last few updates in the history. The date is 95 when it should be 96. Very very minor it just it is easier to track the history with the right date.

Resolution: Updated the template files pgs-dev-env.csh.tmp and pgs-dev-env.ksh.tmp to reflect correct dates in the revision history. These changes will be picked up by pgs-dev-env.csh and pgs-dev-env.ksh when they are created as part of the installation process.

5.3 Release A Toolkit Version 5.1.1 Non-Conformance Reports (Open Status)

The following NCRs are liens against the Toolkit 5.1.1 delivery:

ID: ECSed00110

Tool: IO_Gen_Open

Title: Unexpected results from AppendUpdate mode

Severity: 2

Description: I ran the following test case:

1. open a file with PGSd_IO_Gen_AppendUpdate mode
2. read a 80 character string from the file
3. write a double precision number to the file
4. close the file

When I looked at the data file after this test was run, the string that was read in had been appended to the end of the file, then the double precision number after that.

ID: ECSed00765

Tool: SendRuntime,SendStat

Title: Files are not being sent when running on the HP and IBM.

Severity: 3

Description: While running on the HP, trying to send files to either of the following:

1. Adriatic itself
2. bering.hitc.com
3. eos.hitc.com

The files don't get sent. It was tried inside and outside of ClearCase, and when running the ftp command from the command line it works successfully.

The sun4, sgi and dec don't have any problems(ibm and sun5 are unavailable).

Added 2/21/95: After running on the ibm and sun5: sun5 successful, IBM UNSUCCESSFUL. I tried running on a different HP machine(catfish), same operating system, and it produced the same results.

Analysis To-Date: After 16 hours of analysis, a resolution is still unknown. Possible causes for the problem include memory-leak and/or OS configuration. ftp itself is not really suspect since it appears to function properly outside the

current application. Further analysis will begin with the use of memory-leak detection tools.

ID: ECSed00986

Tool: AA,CUC,HDF

Title: Some tools don't work on the CRAY.

Severity: 3

Description: The following is a list of problems on the CRAY ('charney.gsfc.nasa.gov'):

AA tools:

They either core dump, produce very large results or zero results.

CUC tools:

The CUC_Conv tool doesn't compile, specifically the UDUNITS freeware libraries

Section of log file:

Making all in CUC

Copying machine specific Makefiles into Makefile for UDUNITS

```
cp: cannot access UDUNITS/port/fortc/Makefile_cray
```

```
Make: "echo "Copying machine specific Makefiles into Makefile for UDUNITS"; \  
\  
find ./UDUNITS -name Makefile -exec chmod 664 {} \; ;\  
\  
cp UDUNITS/port/fortc/Makefile_cray UDUNITS/port/fortc/Makefile; \  
cp UDUNITS/port/Makefile_cray UDUNITS/port/Makefile; \  
cp UDUNITS/Makefile_cray UDUNITS/Makefile; \  
find ./UDUNITS -name Makefile -exec chmod 664 {} \; ;\  
if [ -f UDUNITS/utscan.c ] ; then chmod 664 UDUNITS/utscan.c; fi; \  
\  
cp UDUNITS/utscan.c_cray UDUNITS/utscan.c; \  
chmod 664 UDUNITS/utscan.c; \  
/bin/rm -f -rf UDUNITS/lib": Error code 2  
Stop.  
HDF Installation:
```

Here is the error which causes problems, and eventually leads to the libnetcdf.a library not being built properly:

```
m a k i n g           ` i n s t a l l '           i n           d i r e c t o r y
/silo/zmjrjw/PGSTK/HDF3.3r4/mfhdf/libsrc

    mkdir -p /silo/zmjrjw/PGSTK/HDF3.3r4/include

    chmod u+rwx,g+rws,o=rx /silo/zmjrjw/PGSTK/HDF3.3r4/include

chmod: WARNING: Execute permission required for set-ID on
execution for /silo/zmjrjw/PGSTK/HDF3.3r4/include

    cp netcdf.h /silo/zmjrjw/PGSTK/HDF3.3r4/include/netcdf.h

    cp mfhdf.h /silo/zmjrjw/PGSTK/HDF3.3r4/include/mfhdf.h

returning to directory /silo/zmjrjw/PGSTK/HDF3.3r4/mfhdf

m a k i n g           ` i n s t a l l '           i n           d i r e c t o r y
/silo/zmjrjw/PGSTK/HDF3.3r4/mfhdf/ncdump

    mkdir -p /silo/zmjrjw/PGSTK/HDF3.3r4/bin

    chmod u+rwx,g+rws,o=rx /silo/zmjrjw/PGSTK/HDF3.3r4/bin

chmod: WARNING: Execute permission required for set-ID on
execution for /silo/zmjrjw/PGSTK/HDF3.3r4/bin

    cp ncdump /silo/zmjrjw/PGSTK/HDF3.3r4/bin/ncdump

    mkdir -p /silo/zmjrjw/PGSTK/HDF3.3r4/man/man1

    chmod u+rwx,g+rws,o=rx /silo/zmjrjw/PGSTK/HDF3.3r4/man/man1

chmod: WARNING: Execute permission required for set-ID on
execution for /silo/zmjrjw/PGSTK/HDF3.3r4/man/man1
```

MET tools:

Since the HDF installation had problems, the netcdf library was not moved to the proper place and was missing some FORTRAN object files. After manually adding the objects to the library, and moving it to the proper place (\$HDFLIB), we were able to test the MET tools. The tools ran fine in both C and FORTRAN.

ID: ECSed03088
Tool: AA Tools
Title: Output difference in PGS_AA_dem_double in several modes on SGI PC
Severity: 3

Description: When running PGS_AA_dem_double_Driver_c on the SGI Power Challenge (spre1sgi) in several modes (old32-f77, old32-f90, scf-f77, and scf-f90) the following difference occurs in each of the above modes:

```
< Machine Name - fire
---
> Machine Name - spre1sgi

4c4

<
* * * * * - - - - -
PGS_AA_dem_double_Driver_c.out.Jul__7_13:38:17_1995 -----
---
>
* * * * * - - - - -
PGS_AA_dem_double_Driver_c.out.Aug_26_15:45:08_1996 -----

7c7

< Start Date/Time:      Fri Jul  7 13:38:17 1995
---
> Start Date/Time:      Mon Aug 26 15:45:08 1996

46c46

<  Result #3 :      0.000000
---
>  Result #3 :      nan0xf2e400fb
```

Explanation: This looks to me most certainly the case where the results array is not initialized. Tools may not have found the value in which case the result array is untouched. I have said it before that the etst drivers should have a way to determine that the results array has changed or not after the tool has returned. I would like this to be confirmed before I I resolve this NCR.

ID: ECSed03090

Tool: AA Tools

Title: Output differences for PGS_AA_dcw on SGI PC in 64bit mode

Severity: 3

Description: When running PGS_AA_dcw_Driver_c in 64bit mode, the following differences occur (a sample of the whole file):

```
< Machine Name - fire
---
```

```

> Machine Name - spre1sg1

4c4

< *****----- PGS_AA_dcw_Driver_c.out.Jul__7_13:36:57_1995 -----
*****

---

> *****----- PGS_AA_dcw_Driver_c.out.Aug_26_11:29:42_1996 -----
*****

7c7

< Start Date/Time:      Fri Jul  7 13:36:57 1995

---

> Start Date/Time:      Mon Aug 26 11:29:42 1996

106c106

< Results: 1

---

> Results: 4798

108c108

< Results: 1

---

> Results: 5648

110c110

```

Similar differences are found in the f77 and f90 versions of PGS_AA_dcw_Driver_f.

ID: ECSed03091

Tool: AA Tools

Title: Output differences in PGS_AA_dem_long (f77, f90) on SGI PC in 64bit mode

Severity: 3

Description: When running PGS_AA_dem_long_Driver_f in 64bit mode (f77 and f90), the following differences occur:

```

<                      Results (  2) =    10

---

>                      Results (  2) =     0

```

```

51c51
<                               Results ( 3) =      0
---
>                               Results ( 3) =     10

```

Possible explanation: The values seemed to have switched for some reason. Either there is a problem with the fortran driver in a sense that the array starts from index 1 and not 0 or the data file created for that purpose has some how got the values swithched.

ID: ECSed03692

Tool: GCT

Title: Differences when test the forward and inverse for PGSd_ORTHO

Severity: 3

Description: There are differences using both the c and the fortran drivers for testing the forward and inverse for PGSd_ORTHO

```

X-coordinate # 1 :      47060223.813      sample
Y-coordinate # 1 :      2168263.883
X-coordinate # 2 :      16215988.515
Y-coordinate # 2 :     -1018071.448
X-coordinate # 1 :      7019911.918      current
Y-coordinate # 1 :      2266160.071
X-coordinate # 2 :      16215988.515
Y-coordinate # 2 :     -1018071.448

```

In the latest version of GCT only the SOM projection was modified. That too should not producedifferent results. All there is to do is to provide the LANDSAT RATIO in the parameter list for SOM option A. All this is now explained in the latest version of the toolkit user guide.

ID: ECSed04058

Tool: MET

Title: Unable to convert HDF attribute getpc_int into an ODL format

Severity: 3

Description: Difference file:

```
Unable to convert getpc_int into an ODL format because it was
successful.
```

```
< Toolkit return value:0
```

```
> Toolkit return value:110106
```

```
< PGS_S_SUCCESS: SUCCESSFUL operation
```

```
> ERROR: PGSMET_E_FILETOODL_ERR: Unable to convert HDF
attribute into an ODL format
```

Output file from Sep

```
--Toolkit Input Parameters--
```

```
Operation : getpc_int
```

```
File Number : 5721
```

```
Version Number : 1
```

```
HDF Attribute Name : ORBITDATA
```

```
Attribute Name : ORBITDATA
```

```
--Toolkit Return Values--
```

```
Toolkit return value:110106
```

```
ERROR: PGSMET_E_FILETOODL_ERR: Unable to convert HDF attribute
into an ODL format
```

Possible explanation: In MET tools the test cases are dependent on each other. With recent changes to the MET tools some of the tests results have changed for the better. This may be so in this case as well.

ID: ECSed00225

Tool: ALL Toolkits

Title: Environment variable PGS_PC_INFO_FILE

Severity: 4

Description: This NCR is purposely open to inform everyone that there is an inherent problem on the return status from almost all of the toolkits (IO, MEM, SMF, PC, etc.). The problem is due to not checking the return status from SMF toolkits such as PGS_SMF_SetStaticMsg(), PGS_SMFSetDynamicMsg(), PGS_SMF_SetUNIXMsg() etc. An example would be in MEM tools when trying to set the appropriate error messages by calling SMF, SMF routine detects some environment variable and appropriately returns PGSSMF_E_LOGFILE or PGS_E_ENV to the MEM caller routine. Currently, the MEM routine does not check the return status and proceeds to return MEM specific status; this is the current design. The problem comes about when the user calls

PGS_SMF_GetMsg(). The static buffer error message does not agree with the return status from the MEM tool because the SMF tool, upon detecting an error, has overridden it. At this juncture, we are not sure of the appropriate step to take: have all tools potentially return SMF related errors, which creates more confusion because the user doesn't know the real outcome of his call to the tool, or perform some coupling with the SDPS processing system to let them know what happened and let it take corrective action. These are design issue which must be further explored. Some of the NCRs pertaining to MEM and SMF tools relate to this situation. Refer to enclosures SMF fixed and MEM fixed for further information.

Prob.Desc. from #214 :

From Bug ECSed00214 pgs_toolkit Enclosure 1 of 6 IO_tools

When the environment variable PGS_PC_INFO_FILE isn't set, the IO tools core dump. It seems to also happen when the PGS_TEMPORARY_IO or the PGS_INTERMEDIATE_INPUT variables aren't set.

This could be a problem in the underlying PC tools that are called and have to use these environment variables.

Added 10/16/94: The problem still exists, here is a break-down so far:

All machines core-dump when the PGS_PC_INFO_FILE isn't set.

sun5: Somehow makes the driver go into an infinite loop after return from open call.

sun4: Returns properly from open and temp_open then dies at temp_delete call.

sgi: Returns properly from open then dies at temp_open call.

hpdec: Both die at the initial open call.

ibm: Unable to test - machine not responding.

Prob.Res. from #214:

From Bug ECSed00214 pgs_toolkit Enclosure 2 of 6 IO_tools

Added 941014: This problem was due to recursive avalanche between PC, IO & SMF functionality. This has been fixed by incorporating caller id checks within these 3 toolkit subgroups. The IO Tools no longer crash when the PCF environment variable is unset. However, the return value from the tool, and the message in the status buffer are no longer identical in this situation.

Further Analysis from #214 :

From Bug ECSed00214 pgs_toolkit Enclosure 3 of 6 IO_tools

Added 941018: There a few problems, such as this one, which have begun to appear recently. After thorough analysis on the SGI & HP platforms, this engineer

is convinced that the problem stems from a memory leak at lower levels. This conclusion is partly based on test results achieved when different drivers were used to duplicate the errors cited in this NCR. In short, this engineer's driver produces correct results under the conditions stated in the NCR, while the author's driver produces incorrect results i.e. it gives up the ghost. When an interactive debugging session was run using the author's driver, a segmentation fault occurs which places the instruction pointer in "deep" space instead of in user space i.e. source code is no longer being pointed to. Other hints include incorrect results from code which used to work, but which now produce anomalous behavior. (specifically, the temporary name generation algorithm when run on the SGI under the conditions specified in the NCR)

Partial Solution from #214 :

From Bug ECSed00214 pgs_toolkit Enclosure 5 of 6 IO_tools

Added 950213: This problem, which has persisted since before TKO, would appear to have many causes. To this end, 2 of those causes have now been remedied. Some checks, concerning the retrieval of temporary I/O environment variables, missed the mark for TK3; this was the first correction. As of TK4, ALL environment variable checks are being performed properly. The second correction resulted from intense debugging of the author's IO/GEN test driver.

Using 'dbx', a section of low-level Process Control functionality became suspect. After isolating the offending functionality into a separate driver (see attachment "strchr driver"), the following results were achieved:

dec alpha	OSF1 v3.0	segmentation fault
sgi ip20 mips	IRIX 5.2	segmentation fault
sun5 sparc	SunOS 5.3	segmentation fault
sun4	SunOS 4.1.3	segmentation fault
hp 9000/735	HP-UX A.09.01	completed successfully

Although the documentation does not elaborate, it is clear that this tool cannot handle a null string as the search string input argument. To correct the problem in our code, I recommend that these calls be bypassed in the event that such a null condition exists.

The following files & lines are affected:

PGS_PC_BuildFileShm.c	206,211,253,259,290,295
PGS_PC_GetFileName.c	275,313
PGS_PC_GetIndex.c	224
PGS_PC_SkipCheck.c	264
PGS_PC_TermCom.c	660

PGS_SMF_Comp.c 2631
 PGS_SMF_SendRuntimeData.c 528,726
 PGS_SMF_SendStatusReport.c 563,586,609,645,653,661

Though this fix has corrected the problem when the author's driver was used, the testor's driver is currently reporting segmentation faults? when other environment variables are not set. The net result, once this fix is in place, is that the author can no longer duplicate, even partially, the testor's results. That is why this is only considered a partial solution. strchr driver from #214 :

From Bug ECSed00214 pgs_toolkit Enclosure 6 of 6 IO_tools

Added 950213:

```
#include      <stdio.h>
#include      <string.h>

define       PGSd_PC_SLASH  '/'

main()
{
    char      fName[100];
    char      *reschr;
    int       n;

    n=0;

/*
    strcpy( fName,"how/are/you/today" );
*/

    strcpy( fName,"" );
    n = (int) strlen( fName );
    printf( "string has (%d) characters\n",n );
    fflush( stdout );

    reschr = strchr( fName, (int) PGSd_PC_SLASH );
    n = (int) strlen( reschr );
    printf( "string has (%d) characters\n",n );
```

```

        fflush( stdout );

        if (n > 1)
        {
                printf( "This worked OK!\n" );
                fflush( stdout );
        }
        else
        {
                printf( "This did NOT work!\n" );
                fflush( stdout );
        }
}

```

ID: ECSed02006

Tool: GCT Tools

Title: Minor differences in output found for 64Bit F77/F90

Severity: 4

Description: Minor differences were found in the output diff files for both C and FORTRAN when running F77 and F90 in 64Bit mode for the GCT tools.

ID: ECSed01005

Tool: Entire Toolkit

Title: Warning messages during installation.

Severity: 5

Description: Here are the warning messages, which are normal and have been reduced as much as possible, on the required platforms.

It should be noted that all the warnings (except for the library archiving on the SGI) are in the compiling of the AA tools.

HP:

```

cpp: "stdsyms.h", line 10: warning 2001: Redefinition of macro
_INCLUDE_POSIX_SOURCE.

```

```

cc: "/usr/include/regex.h", line 157: warning 611: Qualifiers
are not assignment-compatible.

```

```
cc: "/usr/include/regex.h", line 158: warning 611: Qualifiers
are not assignment-compatible.
```

```
cc: "/usr/include/regex.h", line 163: warning 611: Qualifiers
are not assignment-compatible.
```

```
cc: "/usr/include/regex.h", line 164: warning 611: Qualifiers
are not assignment-compatible.
```

```
cc: "/usr/include/regex.h", line 193: warning 611: Qualifiers
are not assignment-compatible.
```

```
cc: "/usr/include/regex.h", line 194: warning 611: Qualifiers
are not assignment-compatible.
```

```
cc: "/usr/include/regex.h", line 200: warning 611: Qualifiers
are not assignment-compatible.
```

```
cc: "/usr/include/regex.h", line 201: warning 611: Qualifiers
are not assignment-compatible.
```

SGI:

```
cc -c -O -ansiposix -DIRIS4 -DSUNCC -DFPROTO -
D_INCLUDE_POSIX_SOURCE -I. -I/usr/pgstest/PGSTK/include -
I/usr/pgstest/PGSTK/include/DCW -I/usr/include/ -
I/usr/include/sys -I/usr/include/.unsupp -
I/usr/include/.unsupp/sys -I/usr/include/X11R5/ vpfprim2.c
```

```
cfe: Warning 740: vpfprim2.c, line 44: conflicting declarations
for 'row_offset' (3.1.2.2(15), 3.1.2.2(27))
```

```
static int row_offset( int field, row_type row, vpf_table_type
table)
```

```
-----^
```

```
cfe: Warning 653: vpfprim2.c, line 44: (previous declaration of
'row_offset' at line 228 in file
'/usr/pgstest/PGSTK/include/DCW/vpftable.h')
```

```
static int row_offset( int field, row_type row, vpf_table_type
table)
```

```
-----^
```

DEC:

```
cc -c -O -std -DDECFortran -DDEC_ALPHA -DSUNCC -DFPROTO -
D_INCLUDE_POSIX_SOURCE -I. -I/space/pgstest/PGSTK/include -
I/space/pgstest/PGSTK/include/DCW -I/usr/include/ -
I/usr/include/sys -I/usr/include/.unsupp -
I/usr/include/.unsupp/sys -I/usr/include/X11R5/ vpfprim2.c
```

```
/usr/lib/cmplrs/cc/cfe: Warning: vpfprim2.c, line 44:
conflicting declarations for 'row_offset'
```

```
static int row_offset( int field, row_type row, vpf_table_type
table)
```

```
-----^
```

```
/usr/lib/cmplrs/cc/cfe: Warning: vpfprim2.c, line 44: (previous
declaration of 'row_offset' at line 228 in file
'/space/pgstest/PGSTK/include/DCW/vpfhtable.h')
```

```
static int row_offset( int field, row_type row, vpf_table_type
table)
```

```
-----^
```

```
cc -c -O -std -DDECFortran -DDEC_ALPHA -DSUNCC -DFPROTO -
D_INCLUDE_POSIX_SOURCE -I. -I/space/pgstest/PGSTK/include -
I/space/pgstest/PGSTK/include/DCW -I/usr/include/ -
I/usr/include/sys -I/usr/include/.unsupp -
I/usr/include/.unsupp/sys -I/usr/include/X11R5/ vvmisc.c
```

```
/usr/lib/cmplrs/cc/cfe: Warning: vvmisc.c, line 560: Second arg
in __builtin_va_start must be param
```

```
__builtin_va_start(ap, string, 1) ;
```

```
-----^
```

SUN5:

NONE

SUN4:

```
acc -c -O -Xa -DsunFortran -DSUN -DSUNCC -DFPROTO -
D_INCLUDE_POSIX_SOURCE -I. -I/newsroom/pgstest/PGSTK/include -
I/newsroom/pgstest/PGSTK/include/DCW -I/usr/include/ -
I/usr/include/sys -I/usr/include/.unsupp -
I/usr/include/.unsupp/sys -I/usr/include/X11R5/ set.c
```

```
"set.c", line 574: warning: integer overflow detected: op "<<"
```

```
"set.c", line 588: warning: integer overflow detected: op "<<"
```

```
"set.c", line 591: warning: integer overflow detected: op "<<"
```

```
"set.c", line 643: warning: integer overflow detected: op "<<"
```

```
"set.c", line 656: warning: integer overflow detected: op "<<"
```

```
"set.c", line 664: warning: integer overflow detected: op "<<"
```

```
acc -c -O -Xa -DsunFortran -DSUN -DSUNCC -DFPROTO -
D_INCLUDE_POSIX_SOURCE -I. -I/newsroom/pgstest/PGSTK/include -
I/newsroom/pgstest/PGSTK/include/DCW -I/usr/include/ -
I/usr/include/sys -I/usr/include/.unsupp -
I/usr/include/.unsupp/sys -I/usr/include/X11R5/ vpftable.c
```

```
"vpftable.c", line 509: warning: integer overflow detected: op
"<<"
```

```
"vpftable.c", line 1036: warning: integer overflow detected: op
"<<"
```

```
acc -c -O -Xa -DsunFortran -DSUN -DSUNCC -DFPROTO -
D_INCLUDE_POSIX_SOURCE -I. -I/newsroom/pgstest/PGSTK/include -
I/newsroom/pgstest/PGSTK/include/DCW -I/usr/include/ -
I/usr/include/sys -I/usr/include/.unsupp -
I/usr/include/.unsupp/sys -I/usr/include/X11R5/ vpfwrite.c
```

```
"vpfwrite.c", line 785: warning: integer overflow detected: op
"<<"
```

```
"vpfwrite.c", line 1093: warning: integer overflow detected: op
"<<"
```

```
"vpfwrite.c", line 1107: warning: integer overflow detected: op
"<<"
```

```
"vpfwrite.c", line 1121: warning: integer overflow detected: op
"<<"
```

```
"vpfwrite.c", line 1208: warning: integer overflow detected: op
"<<"
```

```
"vpfwrite.c", line 1261: warning: integer overflow detected: op
"<<"
```

```
acc -c -O -Xa -DsunFortran -DSUN -DSUNCC -DFPROTO -
D_INCLUDE_POSIX_SOURCE -I. -I/newsroom/pgstest/PGSTK/include -
I/newsroom/pgstest/PGSTK/include/DCW -I/usr/include/ -
I/usr/include/sys -I/usr/include/.unsupp -
I/usr/include/.unsupp/sys -I/usr/include/X11R5/ vpfread.c
```

```
"vpfread.c", line 1759: warning: integer overflow detected: op
"<<"
```

```
"vpfread.c", line 1787: warning: integer overflow detected: op
"<<"
```

```
"vpfread.c", line 1799: warning: integer overflow detected: op
"<<"
```

"vpfread.c", line 1813: warning: integer overflow detected: op
"<<"

"vpfread.c", line 1837: warning: integer overflow detected: op
"<<"

"vpfread.c", line 1855: warning: integer overflow detected: op
"<<"

"vpfread.c", line 1887: warning: integer overflow detected: op
"<<"

```
acc -c -O -Xa -DsunFortran -DSUN -DSUNCC -DPROTO -I. -  
I/newsroom/pgstest/PGSTK/HDF3.3r4/hdf/include -  
I/newsroom/pgstest/PGSTK/include -  
I/newsroom/pgstest/PGSTK/include/FF dbevents.c
```

"dbevents.c", line 1549: warning: argument is incompatible with
prototype: arg #1

```
acc -c -O -Xa -DsunFortran -DSUN -DSUNCC -DPROTO -I. -  
I/newsroom/pgstest/PGSTK/HDF3.3r4/hdf/include -  
I/newsroom/pgstest/PGSTK/include -  
I/newsroom/pgstest/PGSTK/include/FF setdbin.c
```

"setdbin.c", line 1040: warning: argument is incompatible with
prototype: arg #1

"setdbin.c", line 1040: warning: argument is incompatible with
prototype: arg #2

```
acc -c -O -Xa -DsunFortran -DSUN -DSUNCC -DPROTO -I. -  
I/newsroom/pgstest/PGSTK/HDF3.3r4/hdf/include -  
I/newsroom/pgstest/PGSTK/include -  
I/newsroom/pgstest/PGSTK/include/FF strnstr.c
```

"strnstr.c", line 135: warning: argument is incompatible with
prototype: arg #1

IBM:

NONE

CRAY:

```
cc -c -O -DCRAYFortran -DUNICOS -DSUNCC -DFPROTO -  
D_INCLUDE_POSIX_SOURCE -I. -I/silo/zmjrjw/PGSTK/include -  
I/silo/zmjrjw/PGSTK/include/DCW -I/usr/include/ -  
I/usr/include/sys -I/usr/include/.unSUPP -  
I/usr/include/.unSUPP/sys -I/usr/include/X11R5/ vvmisc.c
```

```
cc-106 cc: WARNING vvmisc.c, Line = 30, File =  
/usr/include//sys/dirent.h, Line = 17
```

The declaration of "off_t" has no type specifier.

```
cc-119 cc: WARNING vvmisc.c, Line = 30, File =  
/usr/include//sys/dirent.h, Line = 17
```

There is no semicolon after a declaration.

```
cc-106 cc: WARNING vvmisc.c, Line = 30, File =  
/usr/include//sys/dirent.h, Line = 19
```

The declaration of "_SHORTPAD" has no type specifier.

```
cc-119 cc: WARNING vvmisc.c, Line = 30, File =  
/usr/include//sys/dirent.h, Line = 19
```

There is no semicolon after a declaration.

TOTAL WARNINGS DETECTED IN vvmisc.c: 4

Making all in CUC

ID: ECSed01037

Tool: toolkit 5

Title: Some requirements are partially met or deferred

Severity: 5

Description: Some of the requirements for the SDP Toolkit have been partially met in TK5 or deferred for later implementation. For details on the implementation of these requirements, please see both Appendix A and explanatory text in the body of the SDP Toolkit Requirements Specification for the ECS Project July 1995 (revised edition). Implementation of these requirements will occur in the sustaining engineering phase of toolkit development following the Toolkit 5 delivery. The reasons for the partial implementation of these requirements include: lack of definition of level 0 formats, non availability of data sets and no known requirement for some toolkit features prior to instruments that fly on EOS-PM or later.

ID: ECSed04267

Tool: TOOLKIT

Title: Warning messages during 64bit installations (f77 and f90)

Severity: 5

Description: Numerous warning messages occur during the installation of the toolkit in 64-bit FORTRAN 77 mode. The VAST majority of these warnings are generated by the

various “freeware” tools used by the toolkit (e.g. udunits, hdf, etc.). Here are the warnings generated by actual Toolkit functions:

```
cc -64 -c -O -ansiposix -DIRIS4 -I. -
I/vola1/CUSTOM/bin/daac_toolkit_f77/TOOLKIT/i_AA_dcw.c
M/bin/daac_toolkit_f77/TOOLKIT/include/DCW PGS--More--(5%)

"PGS_AA_dcw.c", line 385: warning(1110): statement is
unreachable
```

```
break;
^
```

```
cc -64 -c -O -ansiposix -I. -
I/vola1/CUSTOM/bin/daac_toolkit_f77/TOOLKIT/include -
I/vola1/CUSTOM/bin/daac_toolkit_f77/TOOLKIT/include/CUC
PGS_CUC_Cons.c

"PGS_CUC_Cons.c", line 238: warning(1110): statement is
unreachable
```

```
cuc_agg = RemoveAggregate(cuc_agg);
^
```

```
cc -64 -c -O -ansiposix -DSHMMEM -
I/vola1/CUSTOM/bin/daac_toolkit_f77/TOOLKIT/include
PGS_PC_PutInArea.c

"PGS_PC_PutInArea.c", line 206: warning(1412): destination type
of cast is too
```

```
small to hold all pointers: truncation possible

logicalID = (PGSt_PC_Logical) PCS_data;
^
```

```
cc -64 -c -O -ansiposix -DSHMMEM -
I/vola1/CUSTOM/bin/daac_toolkit_f77/TOOLKIT/include
PGS_PC_PutDataInShm.c

"PGS_PC_PutDataInShm.c", line 267: warning(1412): destination
type of cast is
```

```
too small to hold all pointers: truncation possible

logicalID = (PGSt_PC_Logical) PCS_data;
```

```
cc -64 -c -O -ansiposix -DSHMMEM -  
I/vola1/CUSTOM/bin/daac_toolkit_f77/TOOLKIT/include  
PGS_PC_GetFileByAttrF.c
```

"PGS_PC_GetFileByAttrF.c", line 239: warning(1048): cast
between

pointer-to-object and pointer-to-function

```
searchFunc = (PGSt_integer (*)(char*)) searchFuncF;  
^
```

```
cc -64 -c -O -ansiposix -DIRIS4 -I. -  
I/vola1/CUSTOM/bin/daac_toolkit_f90/TOOLKIT/include -  
I/vola1/CUSTOM/bin/daac_toolkit_f90/TOOLKIT/include/DCW  
PGS_AA_dcw.c
```

"PGS_AA_dcw.c", line 385: warning(1110): statement is
unreachable

```
break;
```

```
^
```

```
cc -64 -c -O -ansiposix -DSHMMEM -  
I/vola1/CUSTOM/bin/daac_toolkit_f90/TOOLKIT/include  
PGS_PC_PutInArea.c
```

"PGS_PC_PutInArea.c", line 206: warning(1412): destination type
of cast is too

small to hold all pointers: truncation possible

```
logicalID = (PGSt_PC_Logical) PCS_data;
```

```
^
```

```
cc -64 -c -O -ansiposix -DSHMMEM -  
I/vola1/CUSTOM/bin/daac_toolkit_f90/TOOLKIT/include  
PGS_PC_PutDataInShm.c
```

"PGS_PC_PutDataInShm.c", line 267: warning(1412): destination
type of cast is

too small to hold all pointers: truncation possible

```
logicalID = (PGSt_PC_Logical) PCS_data;
```

```
cc -64 -c -O -ansiposix -DSHMMEM -  
I/vola1/CUSTOM/bin/daac_toolkit_f90/TOOLKIT/include  
PGS_PC_GetFileByAttrF.c
```

```
"PGS_PC_GetFileByAttrF.c", line 239: warning(1048): cast  
between
```

```
pointer-to-object and pointer-to-function
```

```
searchFunc = (PGSt_integer (*)(char*)) searchFuncF;
```

```
^
```

Appendix A. Build/Installation Instructions

Build/installation instructions for Release A Toolkit are located in Section 5 of the Release A SCF Toolkit User's Guide (333-CD-003-005), and the README file available with the Toolkit for delivery.

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Appendix B. Special Operating Instructions

The test drivers are provided "AS IS" without warranty of any kind. They are provided for example purposes only. The following disclaimer applies to the README files provided with the Test Drivers. These *readme files have not been verified. They do, however, contain valid and useful information concerning the setting of environment variables and compile instructions. However, should there be any errors or discrepancies between the instructions contained in the *README files and the User's Guide, the User's Guide should take precedence.

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Appendix C. System Limitations

None.

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Appendix D. User Feedback Procedures

Please refer to the Release A SCF Toolkit User's Guide for a description of user feedback procedures.

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Appendix E. Public Software Disclaimer Notice

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Appendix F. Test Baseline Configuration

Please refer to the Release A SCF Toolkit User's Guide for a description of the Test Baseline Configuration.

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Abbreviations and Acronyms

A.A.	Astronomical Almanac
AA	Ancillary Data Access
AIRS	Atmospheric Infrared Sounder
API	Application Program Interface
APID	Application Process Identifier
ASTER	Advanced Spaceborne Thermal Emission and Reflection Radiometer
BNF	Bachus-Nauer Form
CBP	Celestial Body Position
CCR	Configuration Change Request
CCSDS	Consultative Committee on Space Data Systems
CDRL	Contract Deliverable Requirements List
CERES	Clouds and Earth Radiant Energy System
COTS	Commercial off-the-shelf Software
CSMS	Communications and Systems Management Segment (ECS)
CRC	Cyclic Redundancy Code
CSC	Coordinate System Conversion
CUC	Constant and Unit Conversions
DAAC	Distributed Active Archive Center
DCE	Distributed Computing Environment
DCN	Document Change Notice
DCW	Digital Chart World
DDF	Data Distribution Facility
DEM	Digital Elevation Model
DDTs	Distributed Defect Tracking system
DPFT	Data Processing Focus Team
DTM	Digital Terrain Model
ECI	Earth Centered Inertial
ECR	Earth Centered Rotating
ECS	EOSDIS Core System
EDHS	ECS Data Handling System
EDOS	EOS Data and Operations System
EOS	Earth Observing System
EOSAM	EOS AM Project (morning spacecraft series)
EOSDIS	EOS Data and Information System

EOSPM	EOS PM Project (afternoon spacecraft series)
EPH	Ephemeris Data Access
ESDIS	Earth Science Data and Information System
ET	Ephemeris Tool
FDF	Flight Dynamics Facility
FOV	Field-of-View
ftp	file transfer protocol
GAST	Greenwich Apparent Sidereal Time
GCT	Geo-Coordinate Transformation
GMST	Greenwich Mean Sidereal Time
GPS	Global Positioning System
GSFC	Goddard Space Flight Center
HAIS	Hughes Applied Information Systems
HDF	Hierarchical Data Format
HITC	Hughes Information Technology Company
http	hypertext transport protocol
I&T	Integration & Test
I/O	Input/Output
IEEE	Institute of Electrical and Electronic Engineers
IMS	Information Management System (ECS)
IWG	Investigator Working Group
JPL	Jet Propulsion Laboratory
LaRC	Langley Research Center
M&O	Maintaince and Operation
MCF	Metada Configuration File
MDUE	Missing Data Unit Entry
MEM	Memory Management
MET	Metadata
MODIS	Moderate-Resolution Imaging Spectroradiometer
MSFC	Marshall Space Flight Center
NASA	National Aeronautics and Space Administration
NCR	Nonconformance Report
NCSA	National Center for Supercomputer Applications
netCDF	network Common Data Format
NMC	National Meteorological Center
PACOR	Packet Processor
PC	Process Control
PGE	Product Generation Executive

PCF	Process Control File
PDS	Production Data Set
PDPS	Planning & Data Production System
PCF	Process Control File
PDR	Preliminary Design Review
PGE	Product Generation Executive (formerly Product Generation Executable)
PGS	Product Generation System (ECS)
PGSTK	Product Generation System Toolkit
POSIX	Portable Operating System Interface for Computer Environments
QA	Quality Assurance
QAC	Quality and Accounting Capsule
RDBMS	Relation Data Base Management System
RPC	Remote Procedure Calls
RRDB	Recommended Requirements Database
SCF	Science Computing Facility
SDP	Science Data Production
SES	Scheduling and Execution Subsystem
SDPS	Science Data Processing Segment
SDPF	Science Data Processing Facility
SGI	Silicon Graphics International
smf	Collection of utilities and library routines used for generating SMFs and manipulating SMF-defined status values and messages
SMF	Status Message File
SPSO	Science Processing Support Office
SSM/I	Special Sensor for Microwave Imaging
TAI	International Atomic Time
TBD	To Be Determined
TD	Time Date Conversion
TDB	Barycentric Dynamical Time
TDRSS	Tracking and Data Relay Satellite System
TDT	Terrestrial Dynamical Time
TLCF	Team Leader Computing Facility
TRMM	Tropical Rainfall Measuring Mission (joint US - Japan)
TSS	(TDRSS) Service Session
UARS	Upper Atmosphere Research Satellite
URL	Universal Research Locator
US	United States
USNO	U.S. Naval Observatory

UT	Universal Time
UTC	Universal Coordinated Time
UTCf	Universal Time Correlation Factor
UTM	Universal Transverse Mercator
VCDU	Virtual Channel Data Unit
VDD	Version Description Document
VPF	Vector Product Format
WWW	World Wide Web